

第Ⅳ部

付録

付 録 A フィルタ/グリズムの透過率 曲線

A.1 グリズム

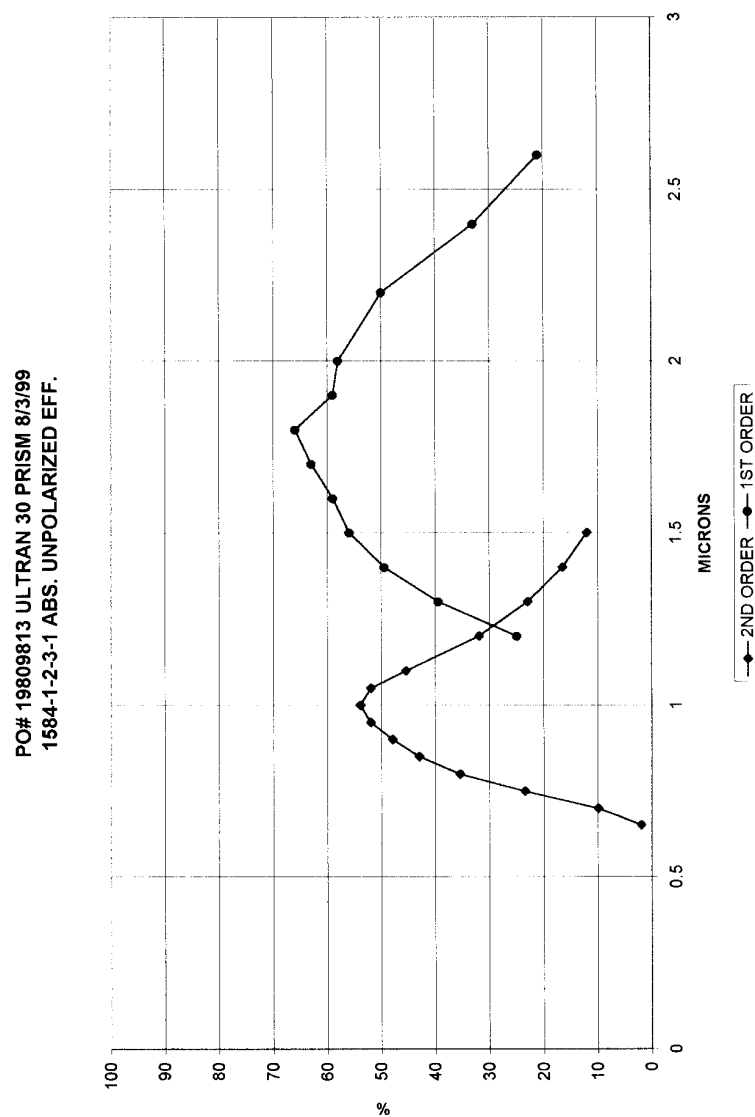


図 A.1: Wide K グリズム

PO# 19801344 PRISM#2 2994-2-1-3

ABS. UNPOL. EFFICIENCY 6/3/98

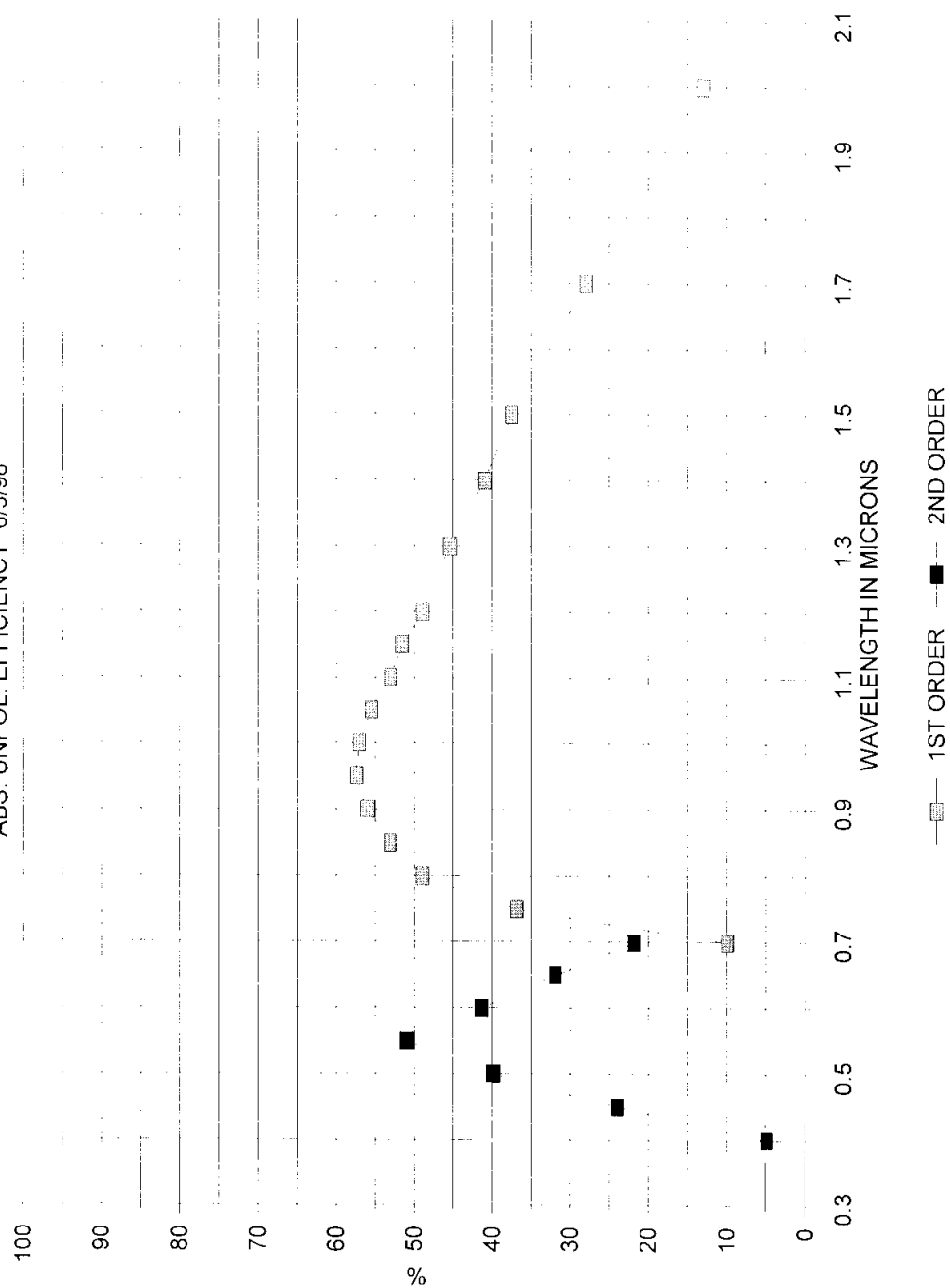


図 A.2: $z + J$ グリズム

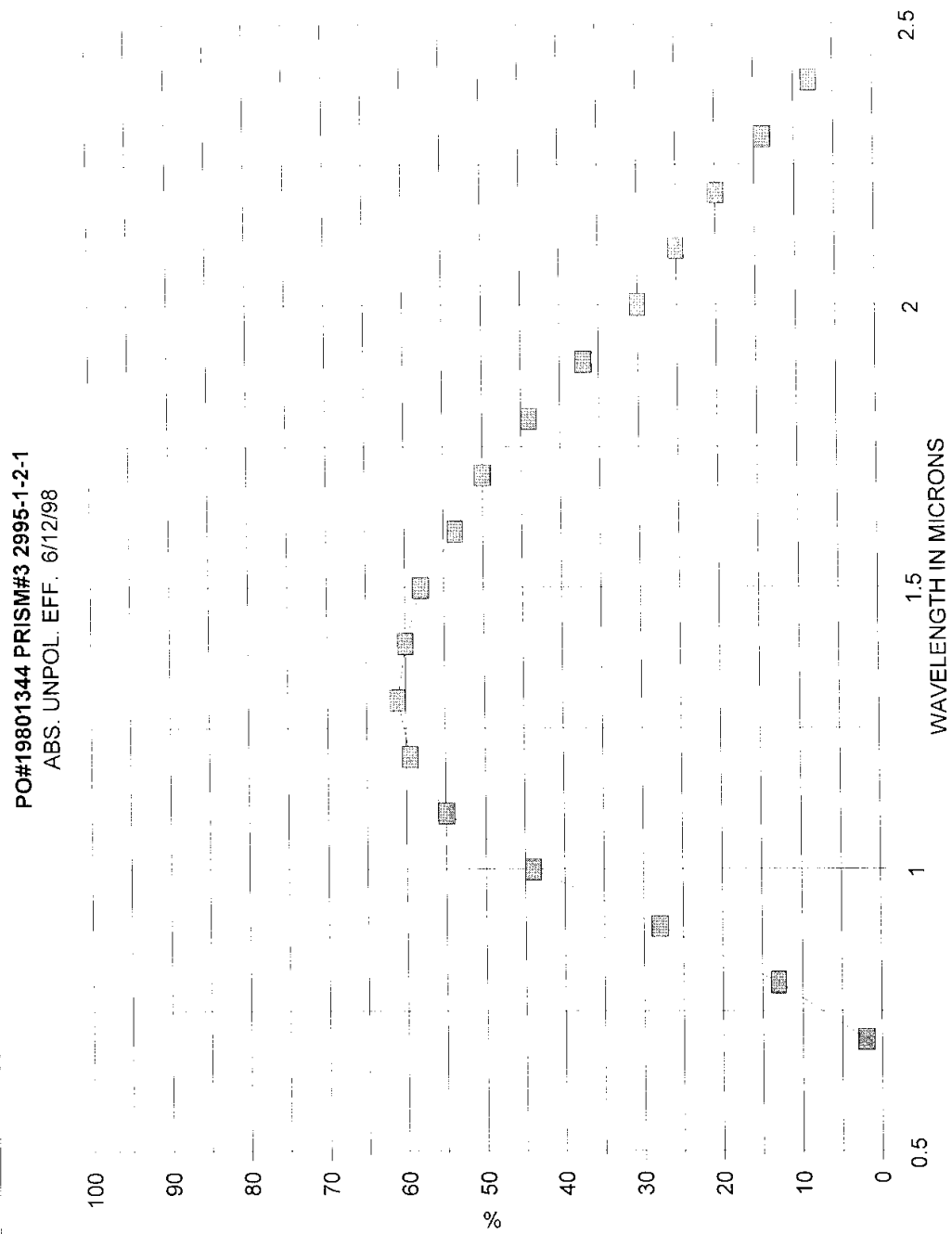


図 A.3: $J + H$ グリズム

A.2 広帯域フィルタ

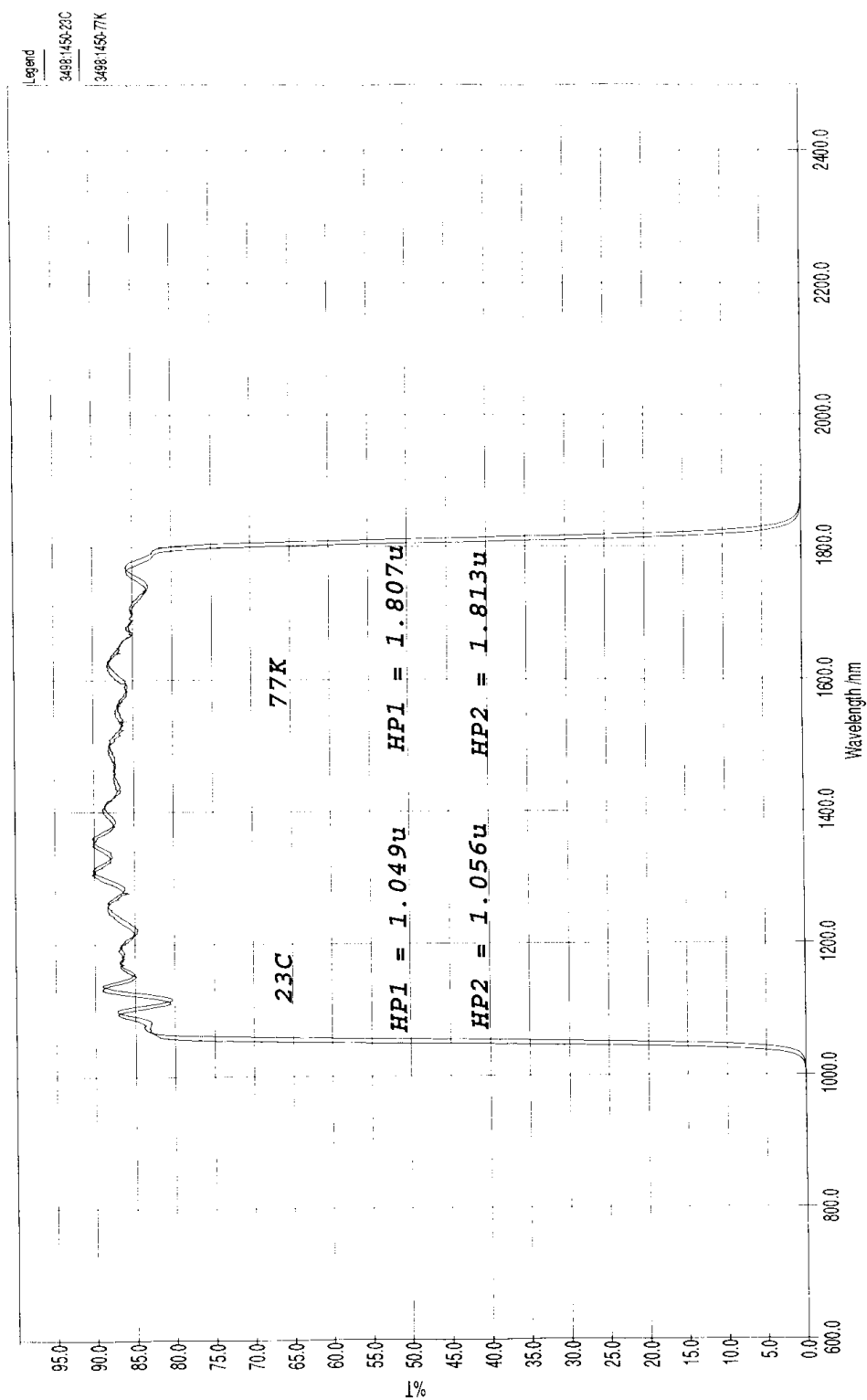


図 A.4: z-バンド

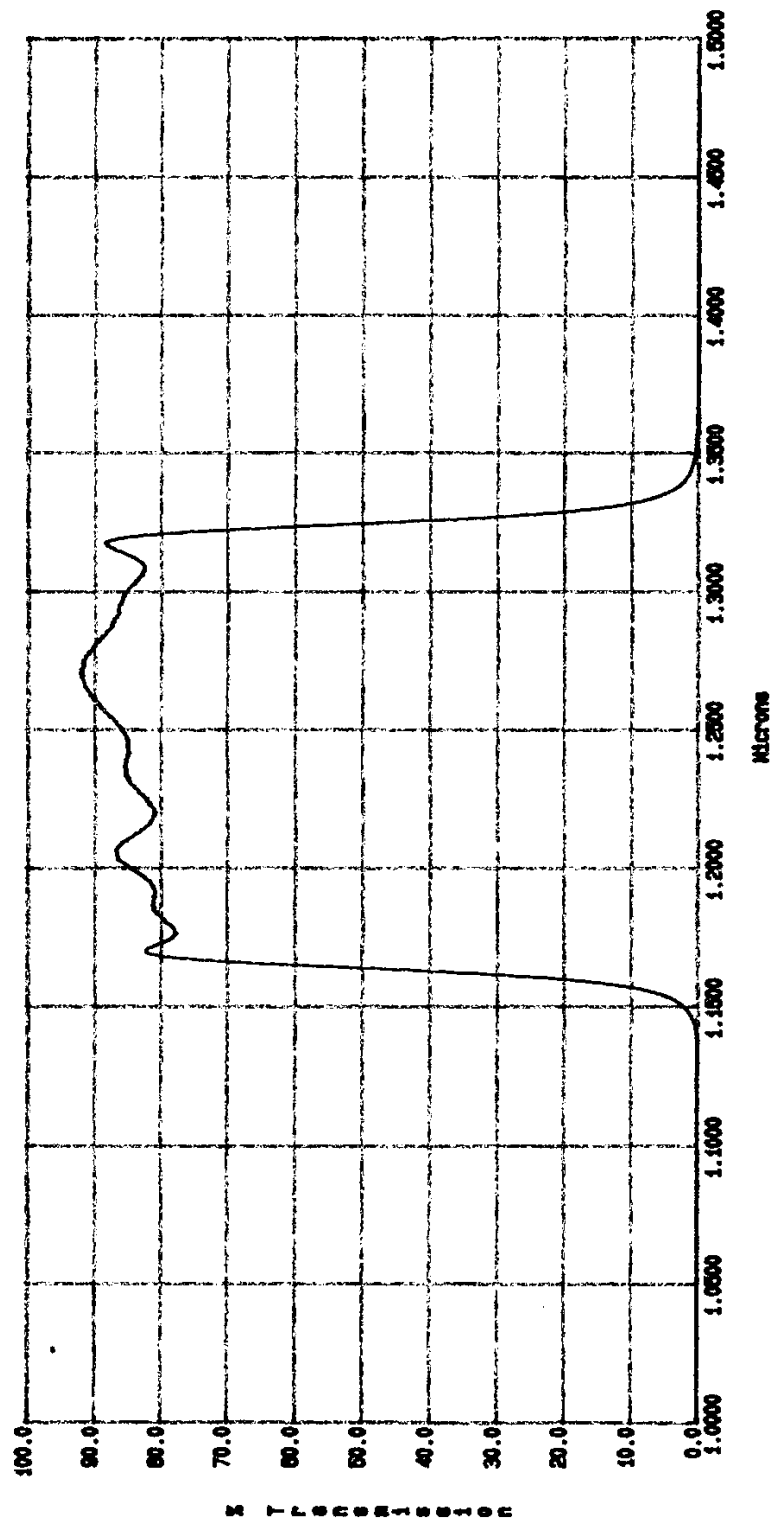


図 A.5: J -バンド

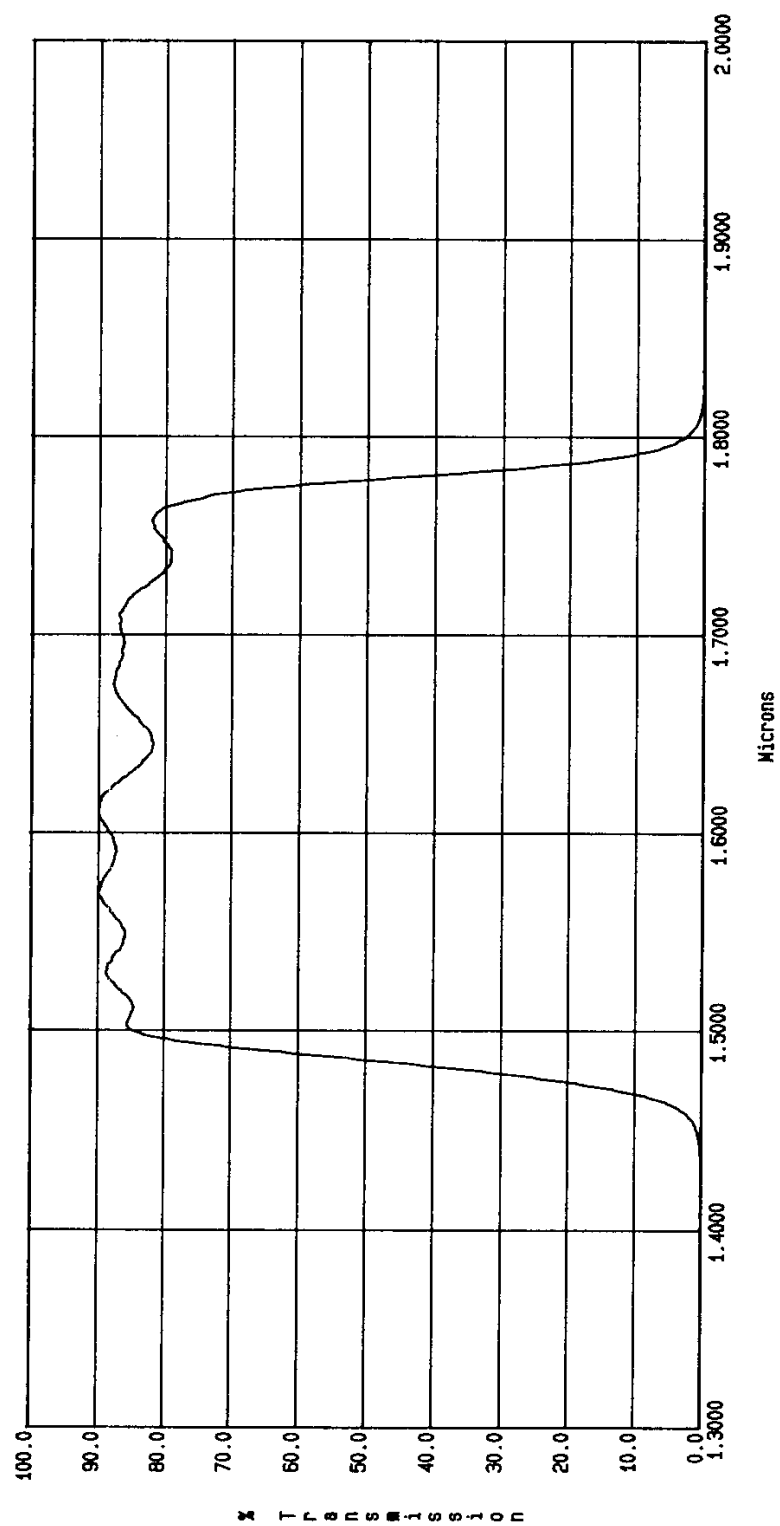


図 A.6: *H*-バンド

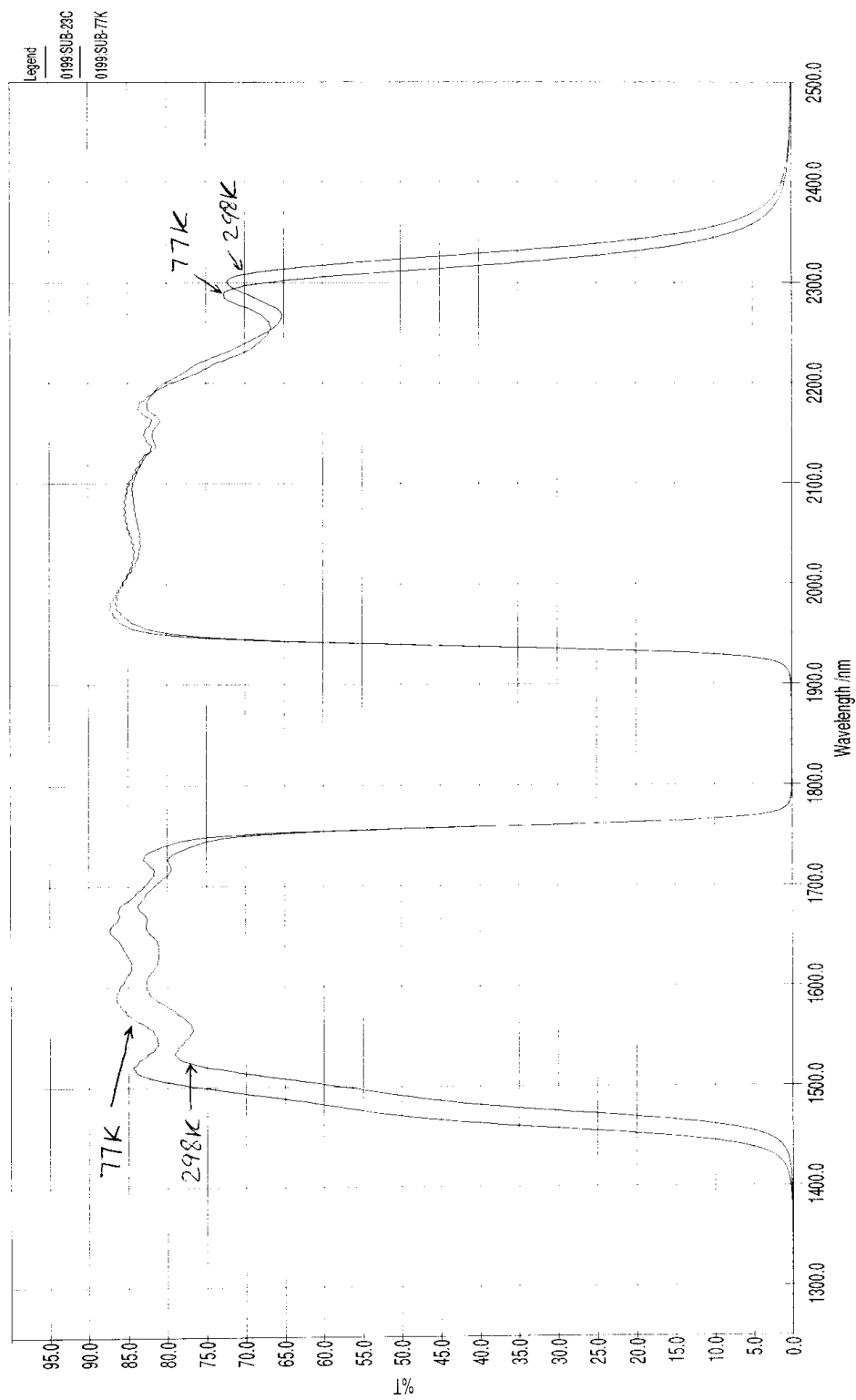


図 A.7: $H + K'$ -バンド

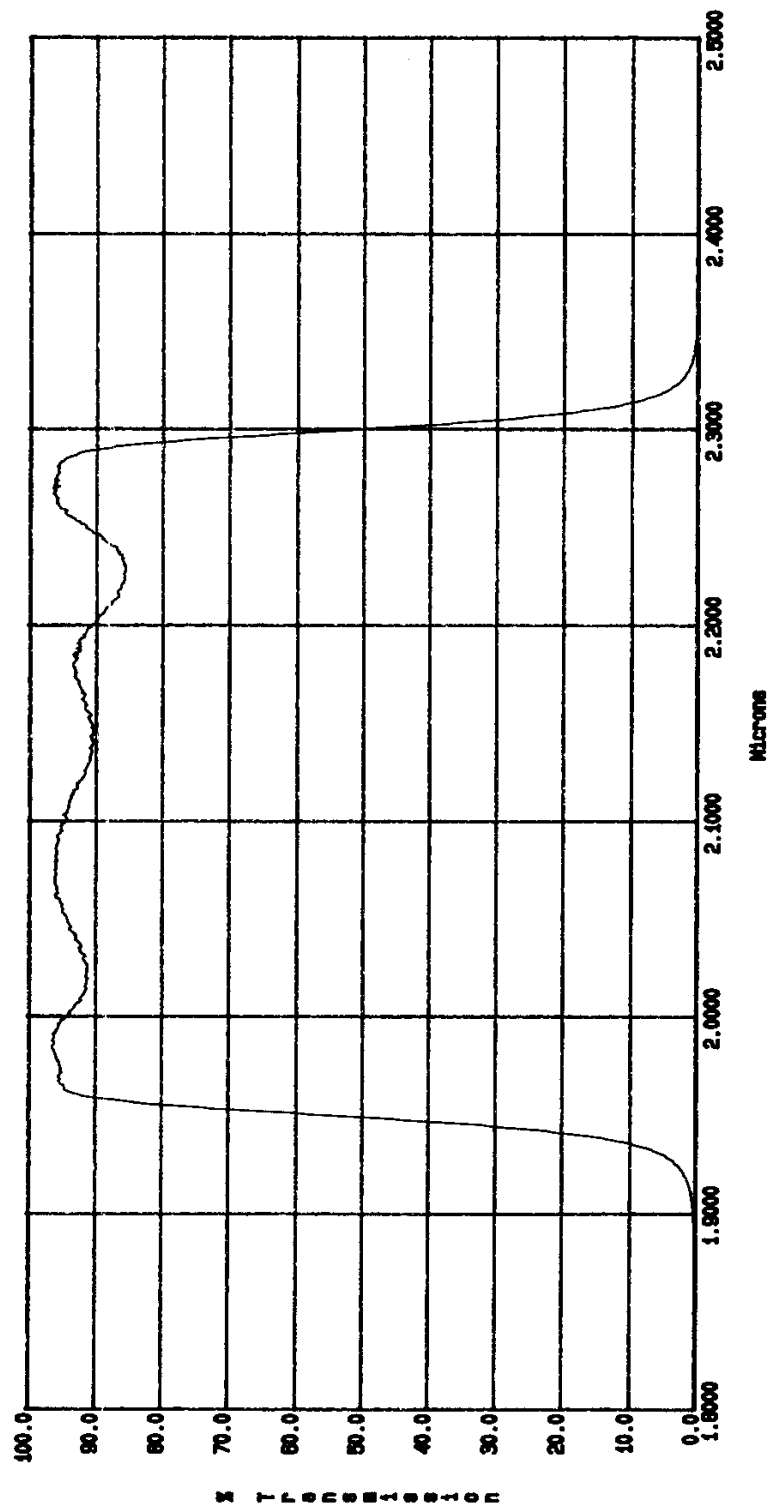


図 A.8: K' -バンド

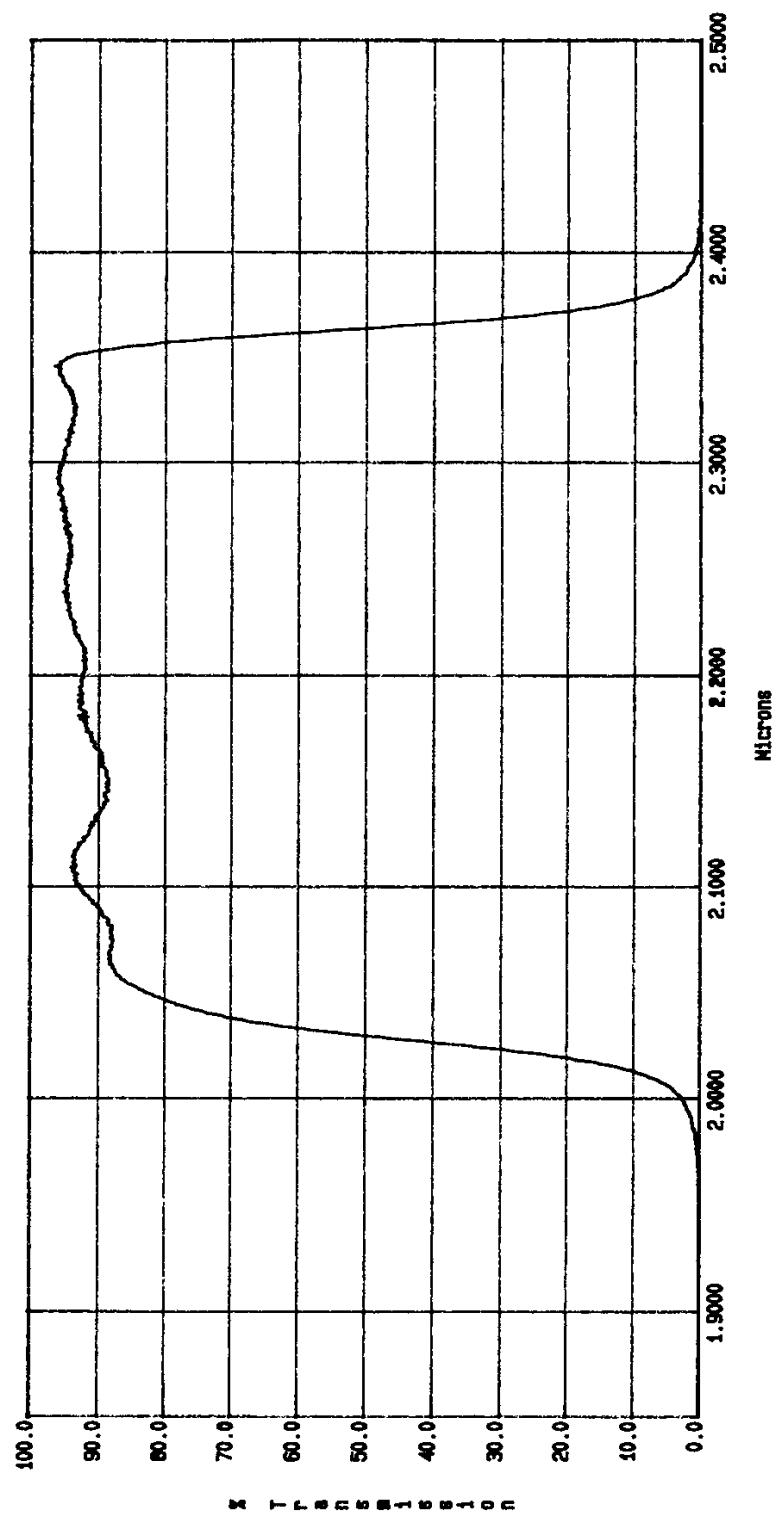


図 A.9: *K*-バンド

A.3 狭帯域フィルタ

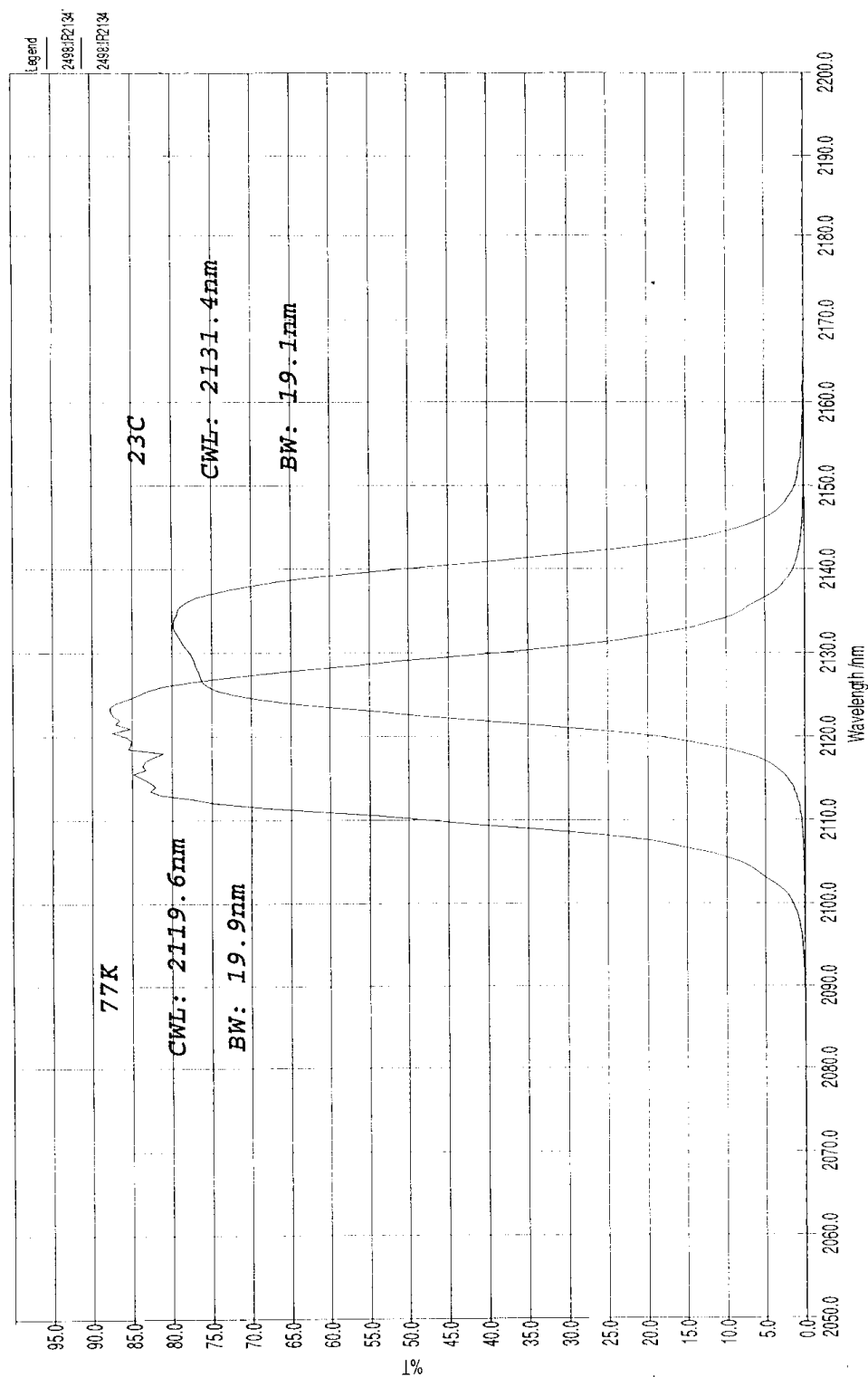


図 A.10: $H_2(1-0)$ -バンド

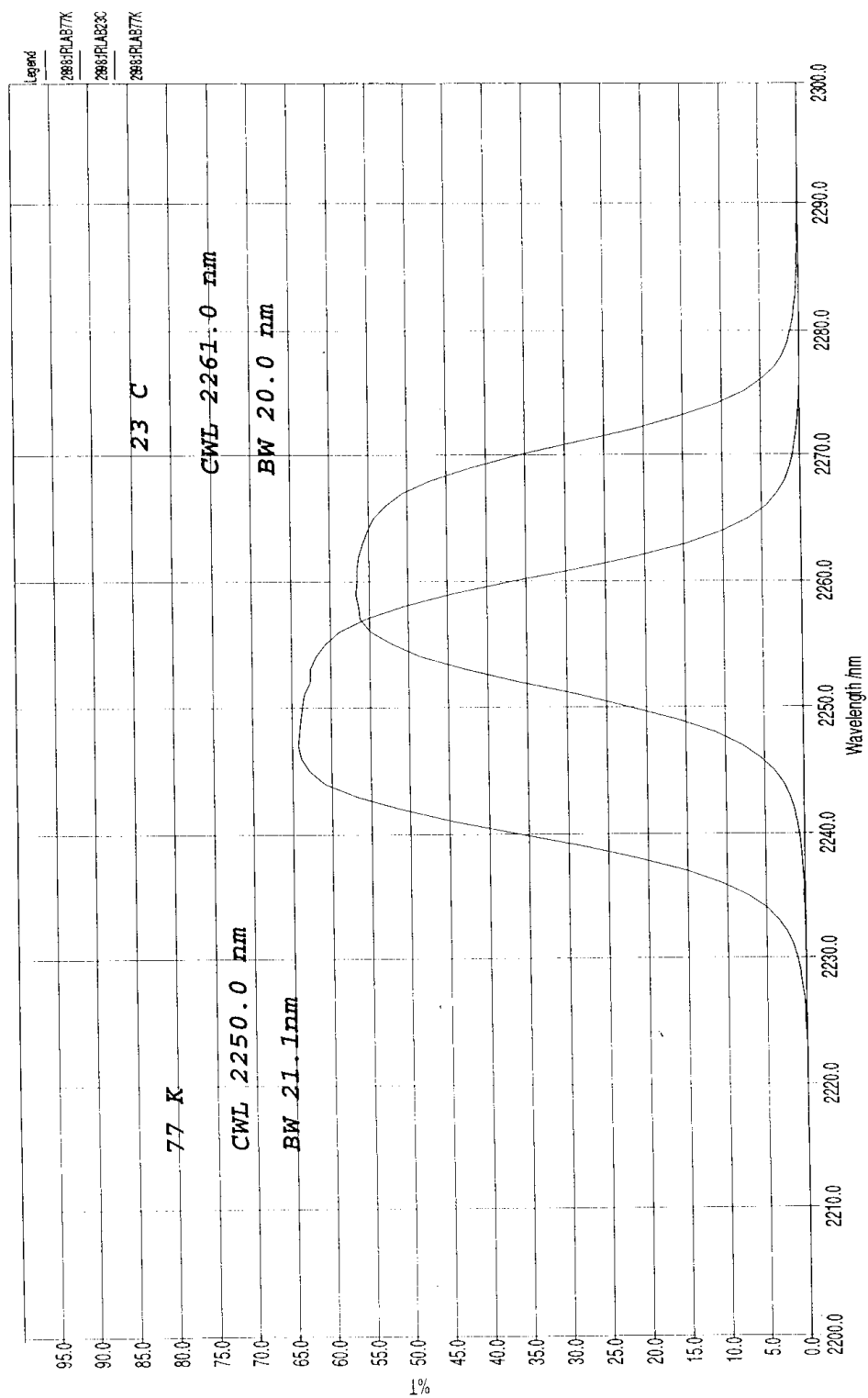


図 A.11: $H_2(1-0)$ -バンド

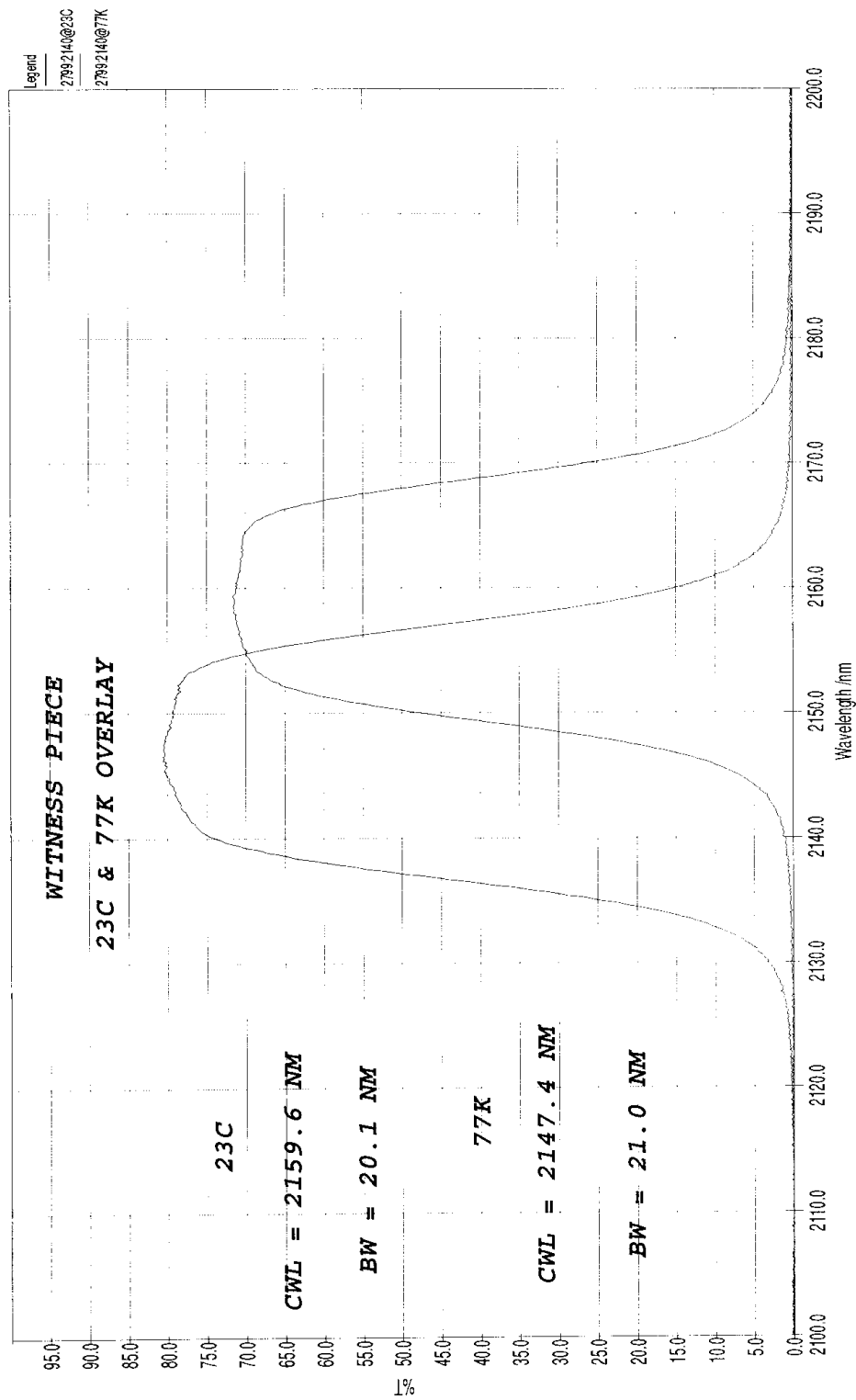


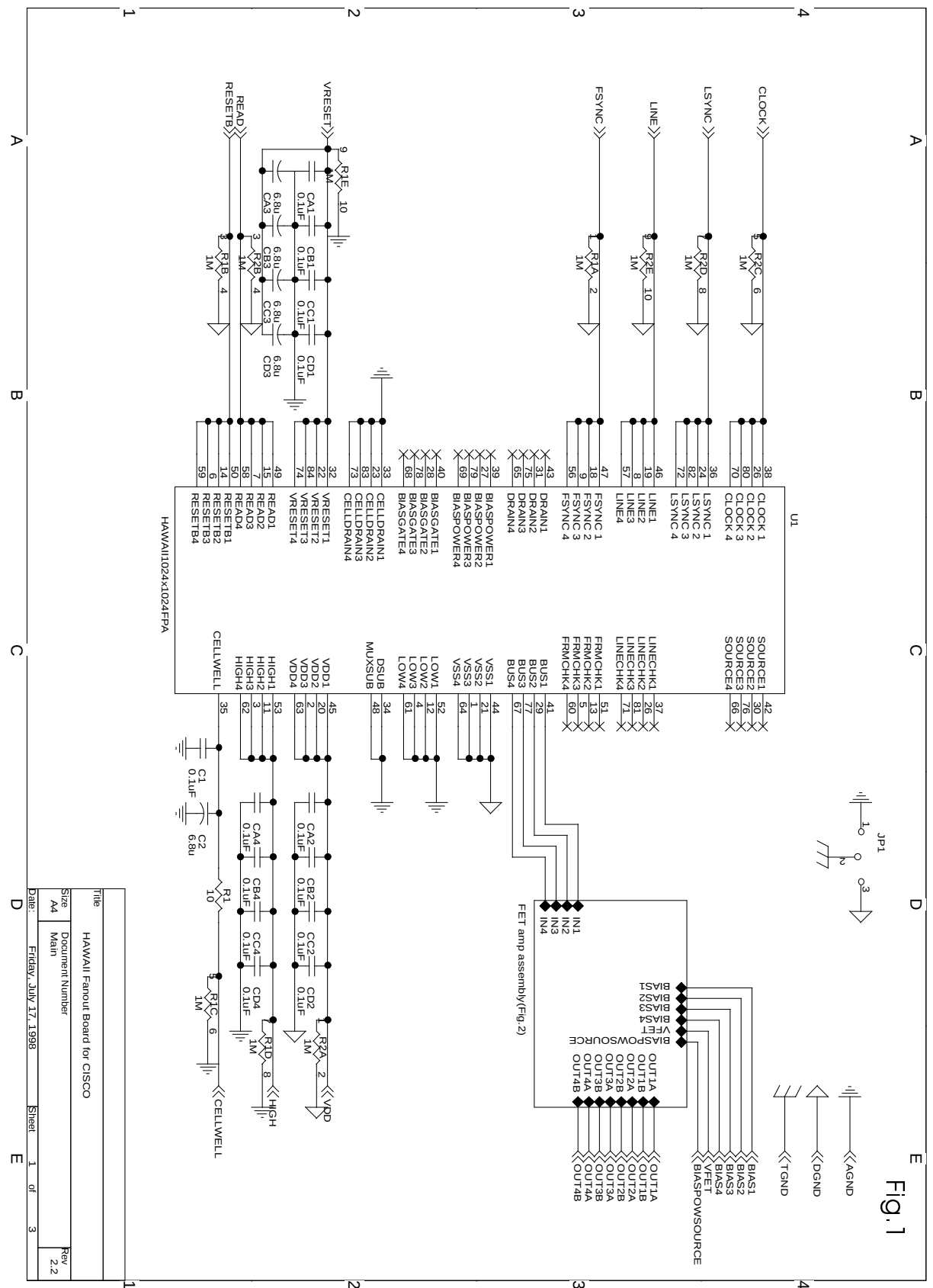
図 A.12: N215-バンド

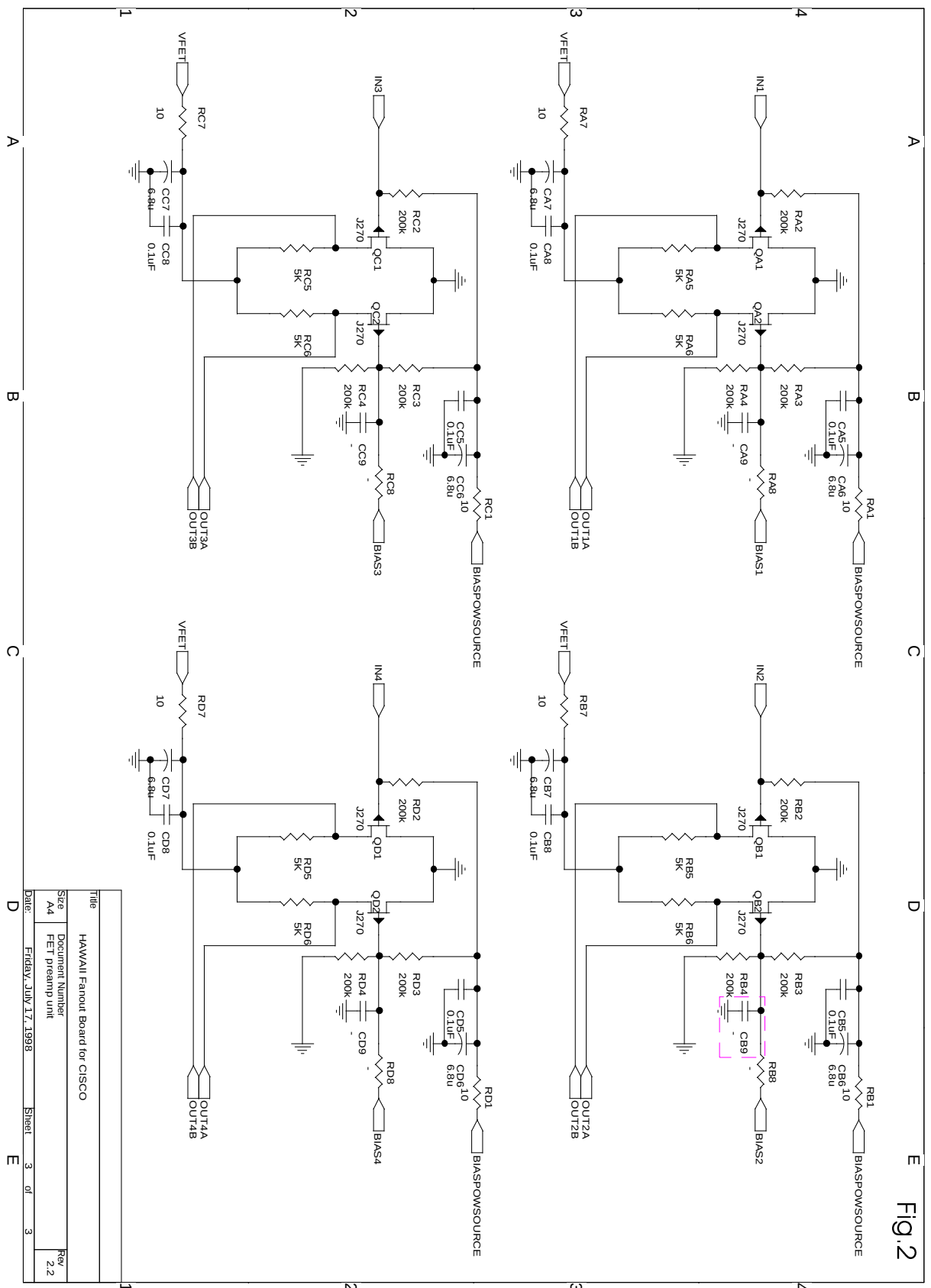
付 録 B HAWAII アレイ 検出器読み出し回路図

B.1 回路図

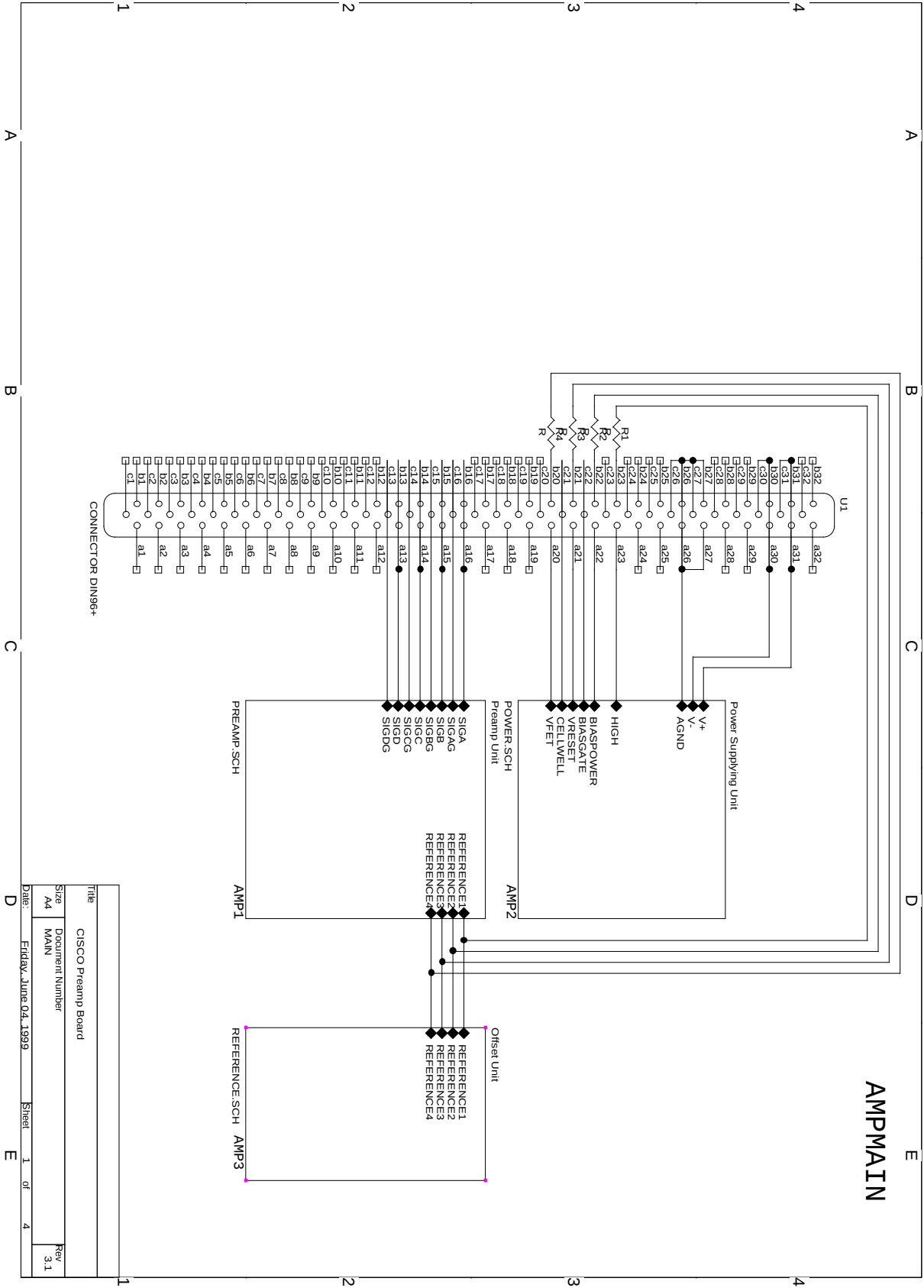
本章で示した読み出し回路図に書かれている回路部品の回路定数は必ずしも実装された部品の回路定数とは一致しない。実装部品の回路定数は次章を参照すること。

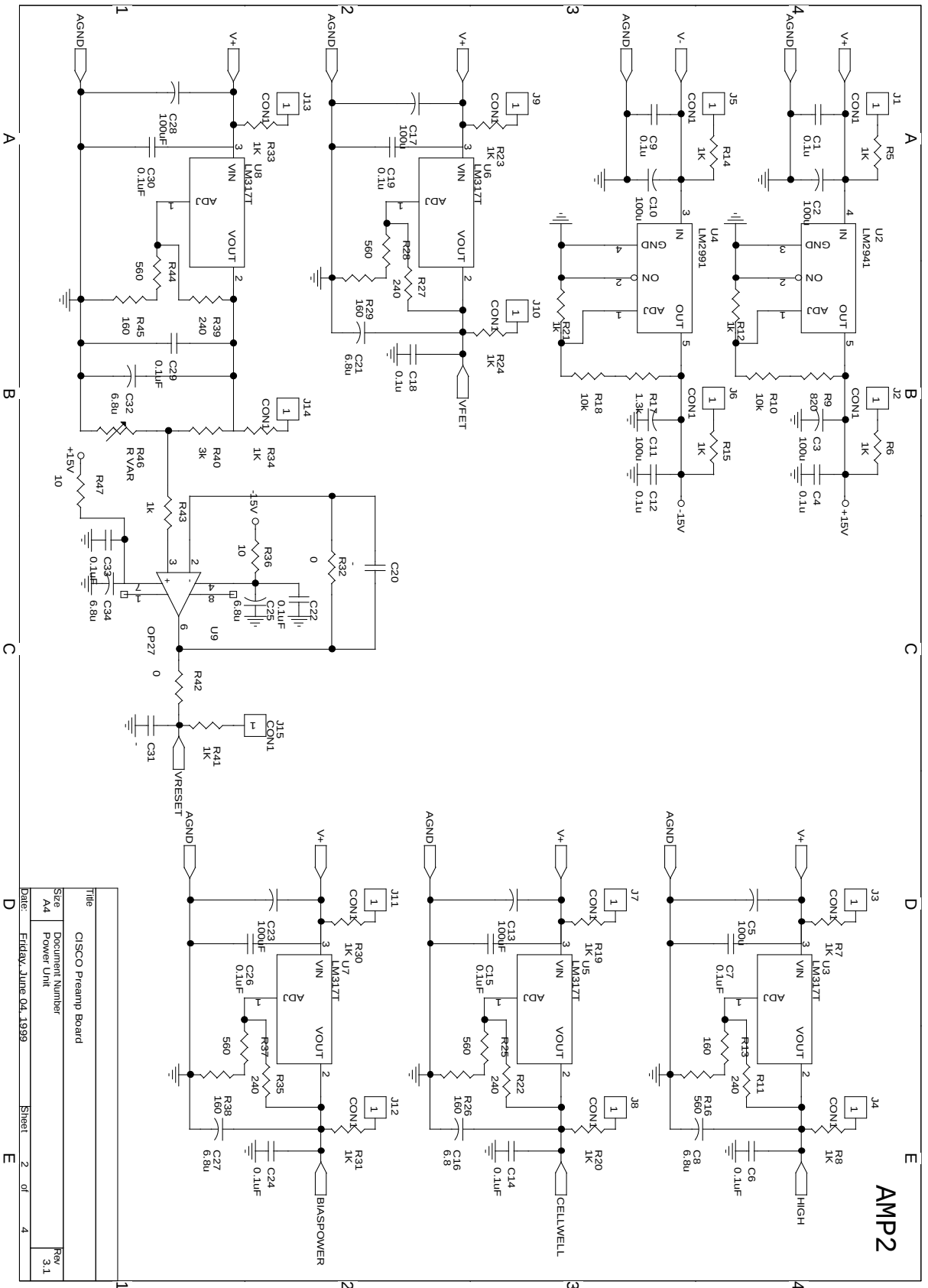
B.1.1 ファンアウトボード



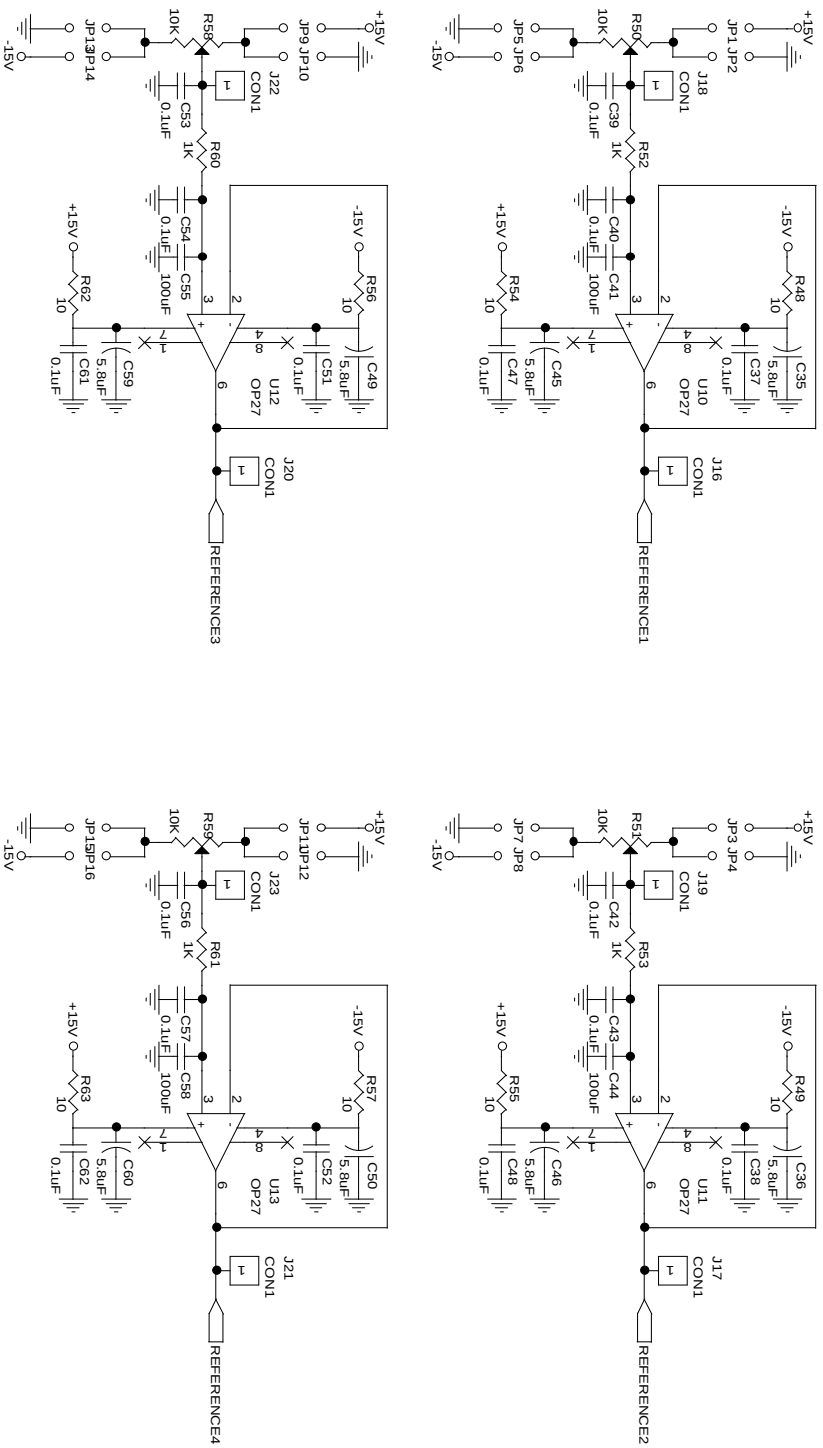


B.1.2 プリアンプボード



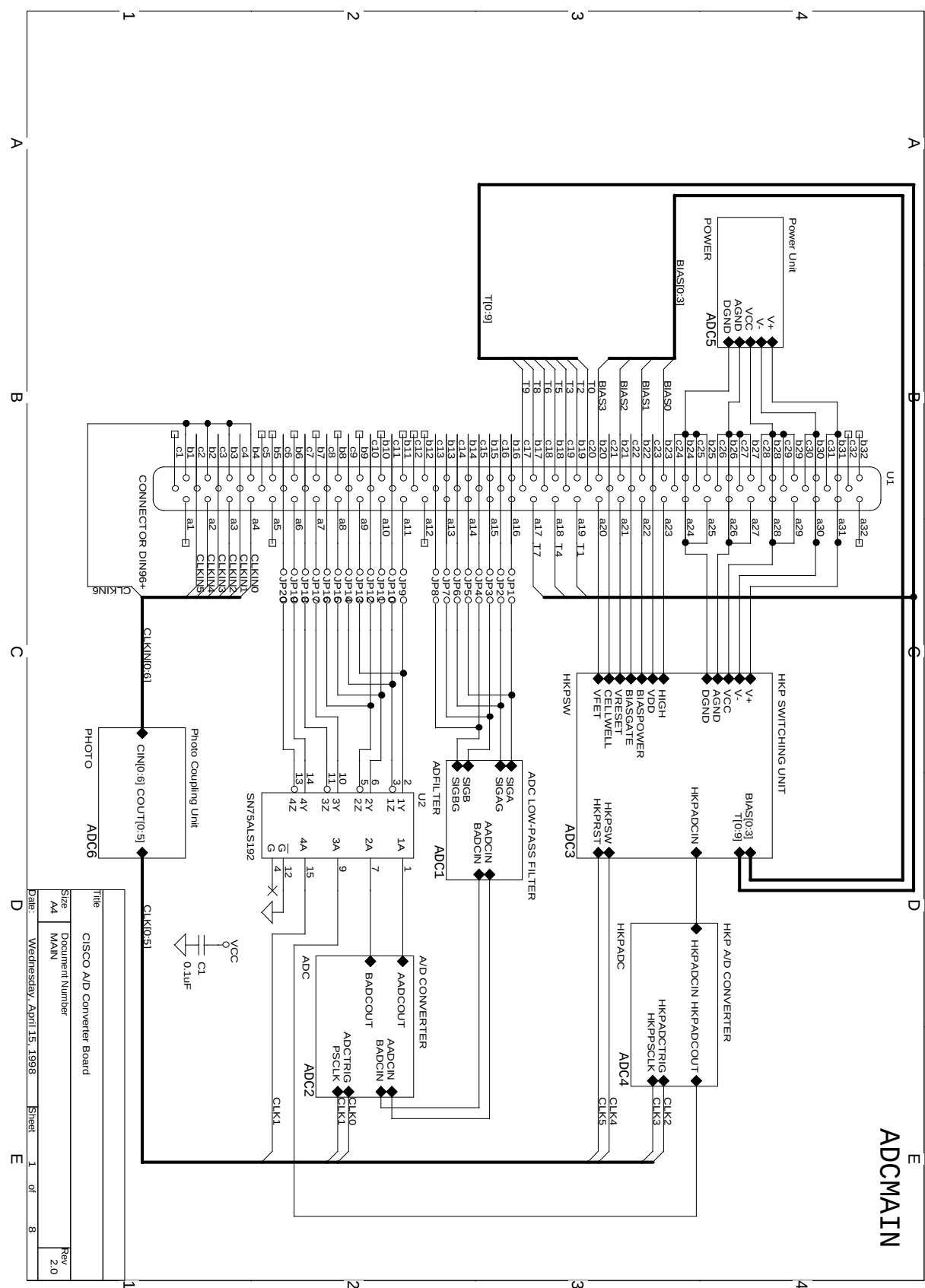


AMP3

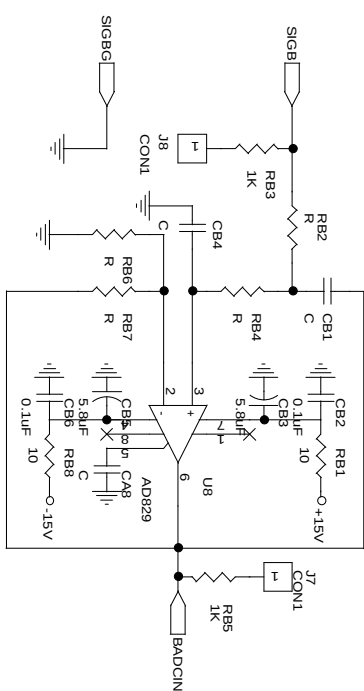
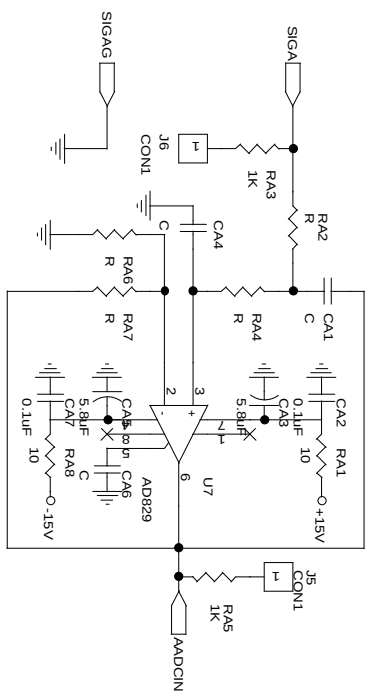


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CISCO Preamp Board		
Size	Document Number	Rev
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Date	Friday, June 04, 1999	Sheet 4 of 4

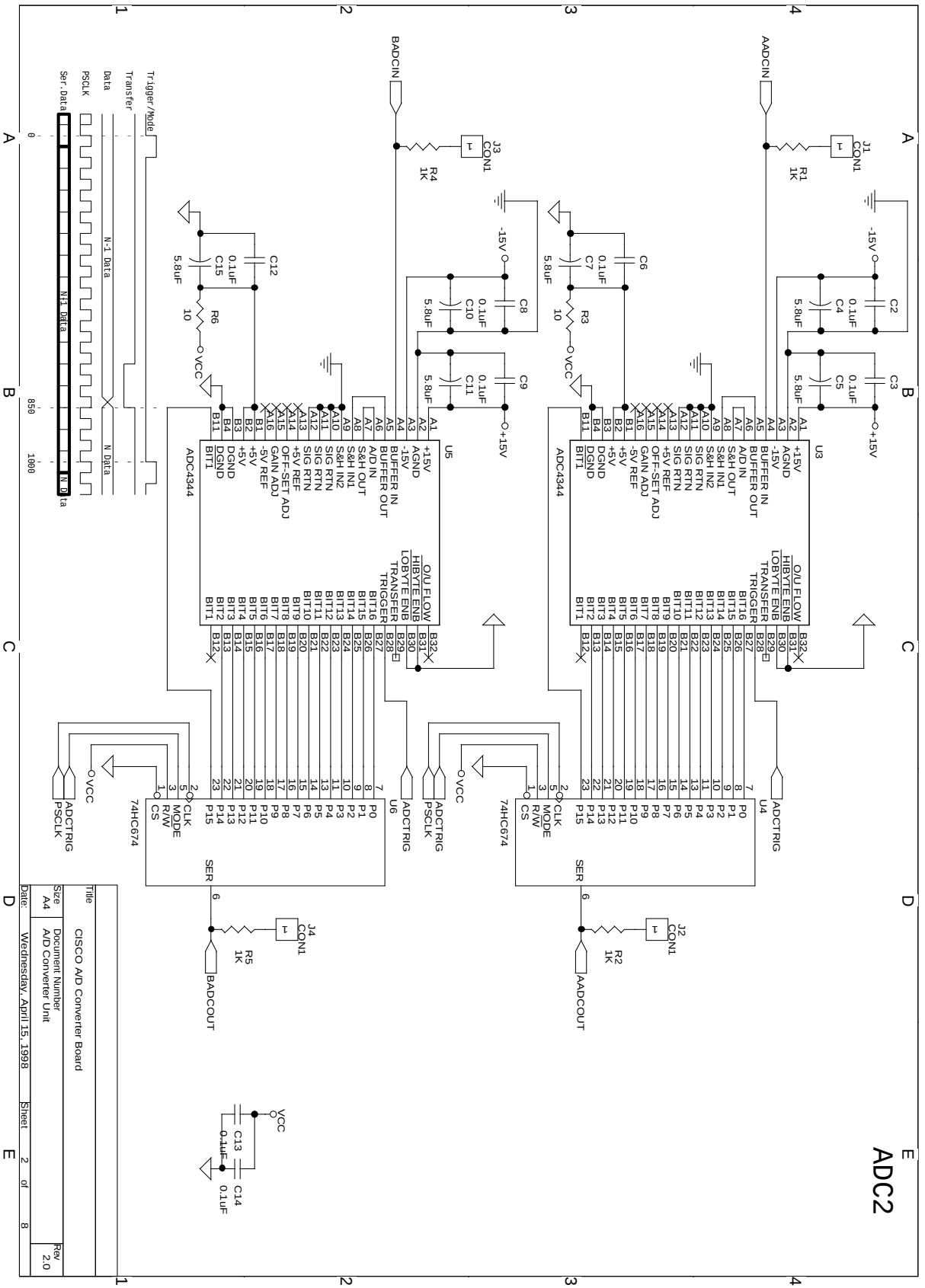
B.1.3 ADC ボード

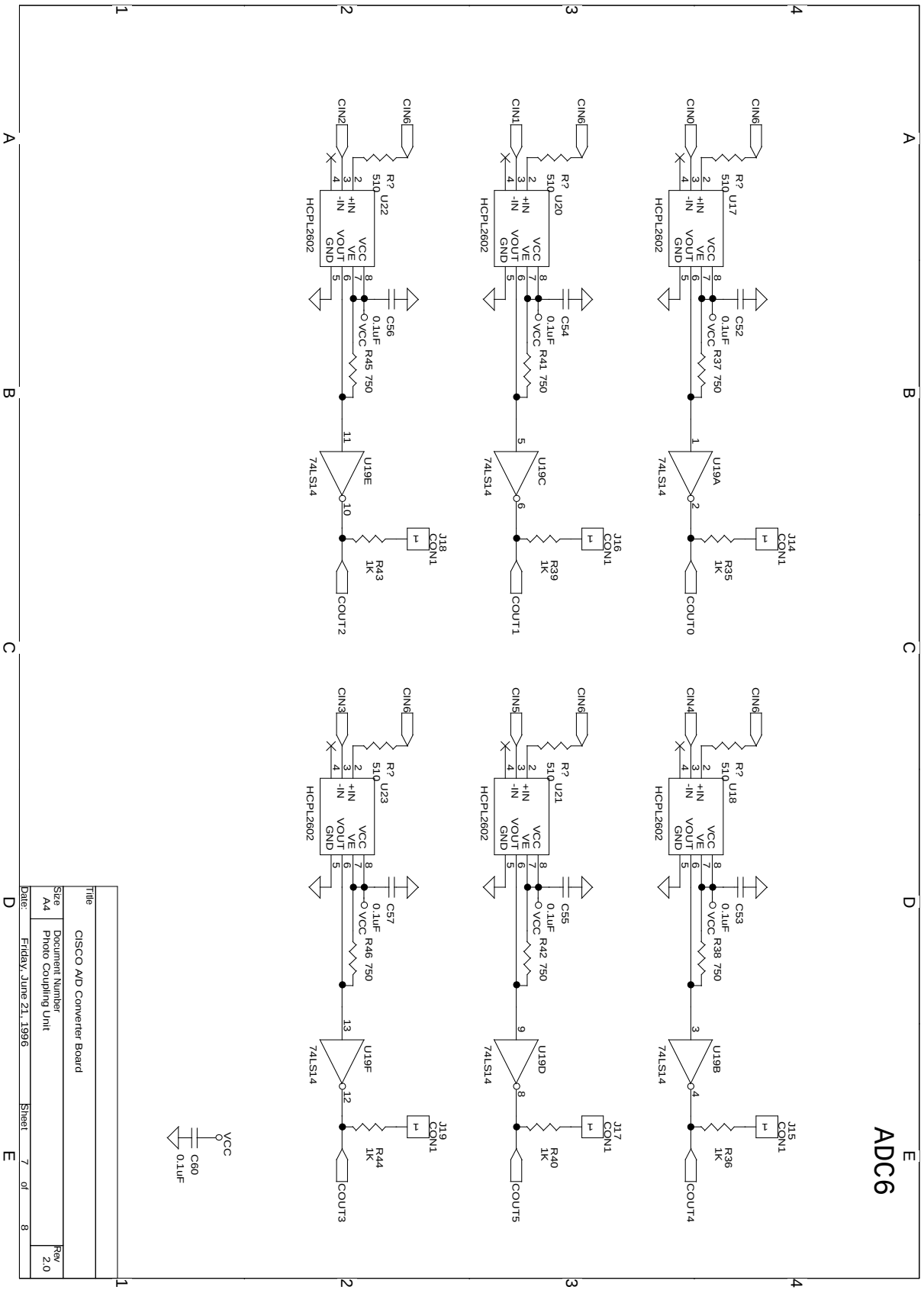


E
ADC1

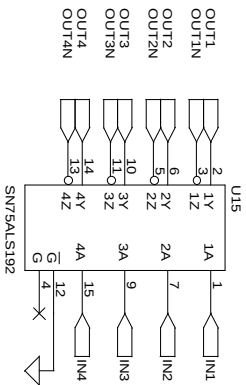


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Date:	Wednesday, April 15, 1998	Sheet	3 of 8

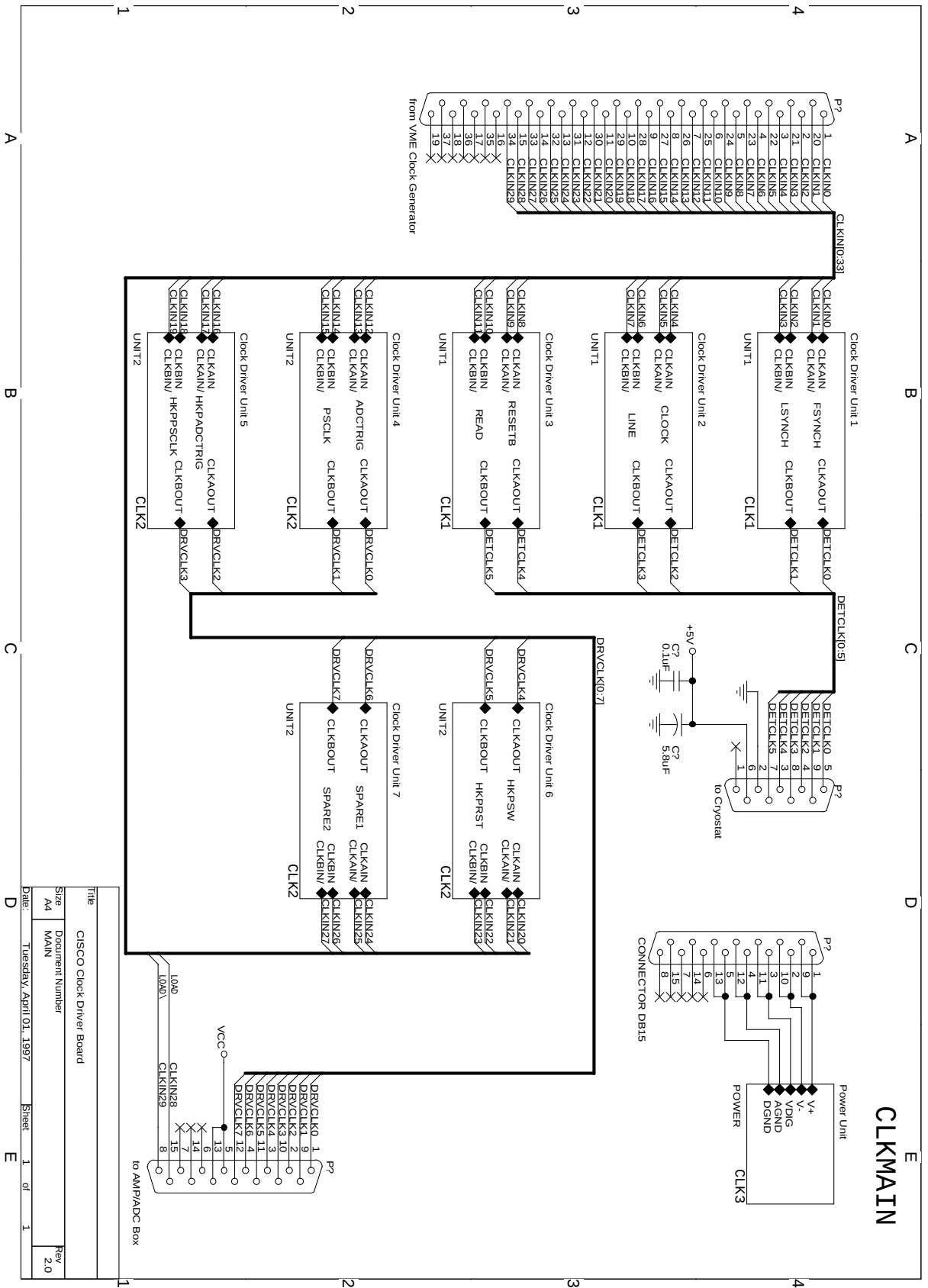


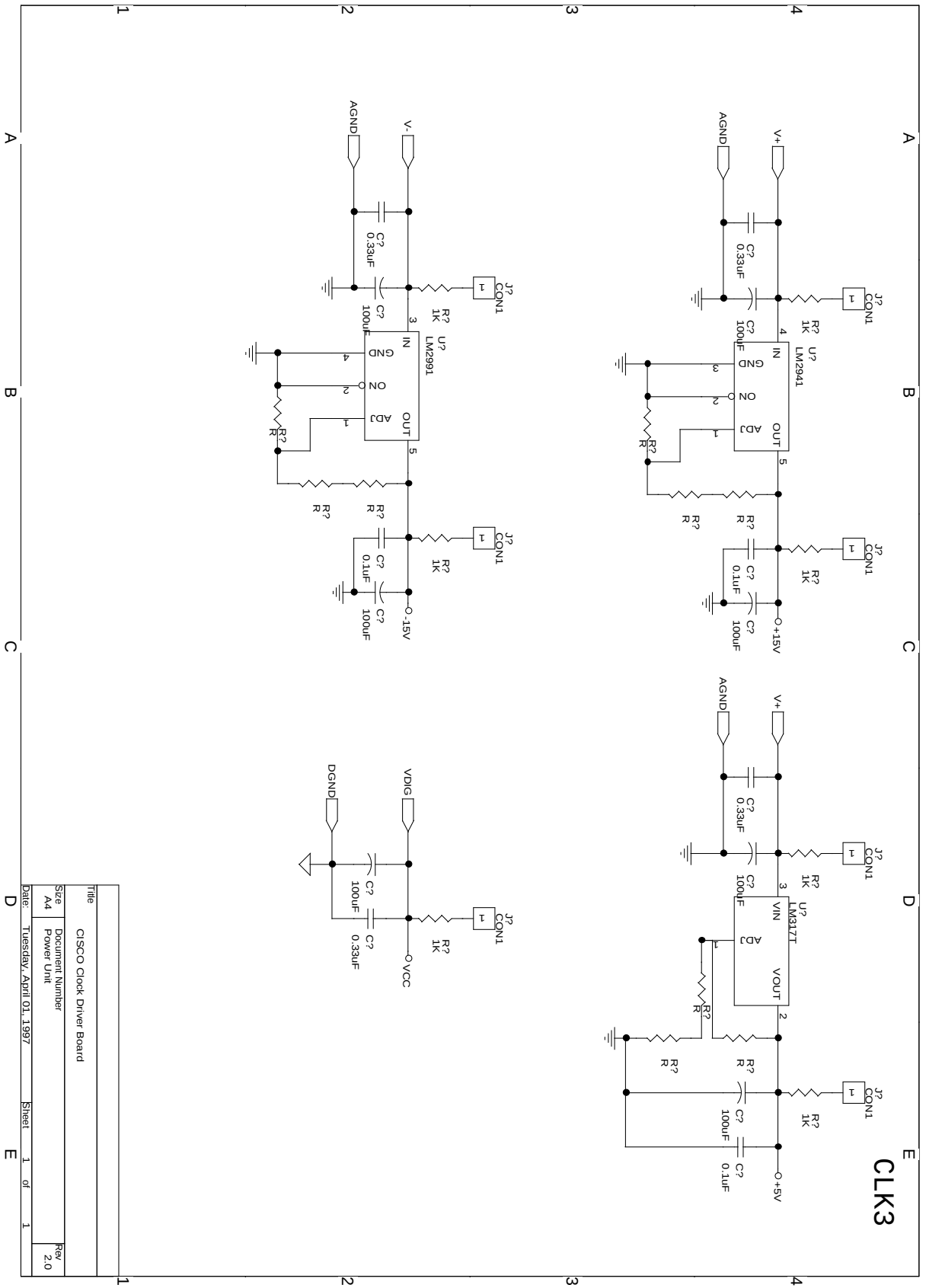


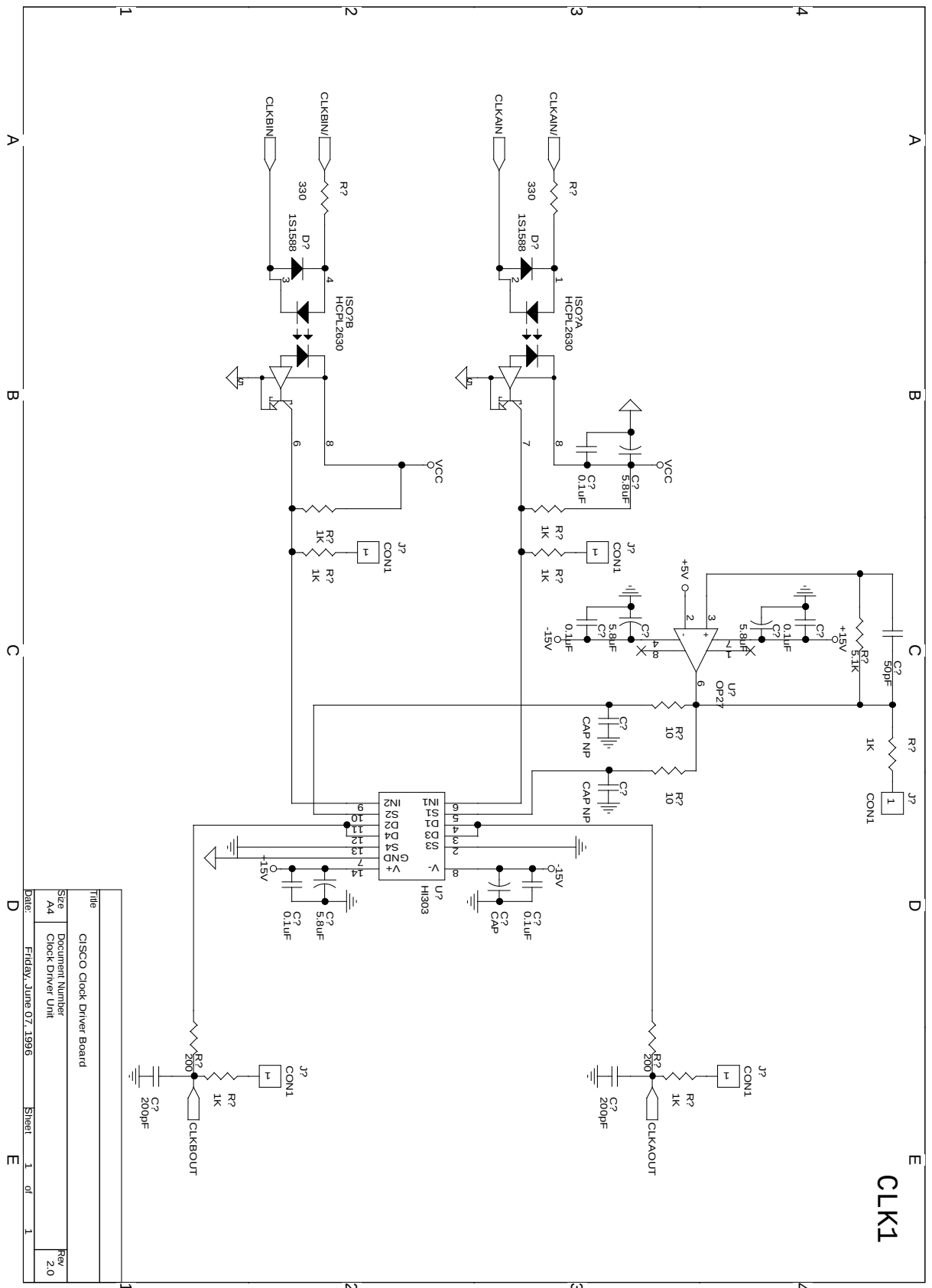
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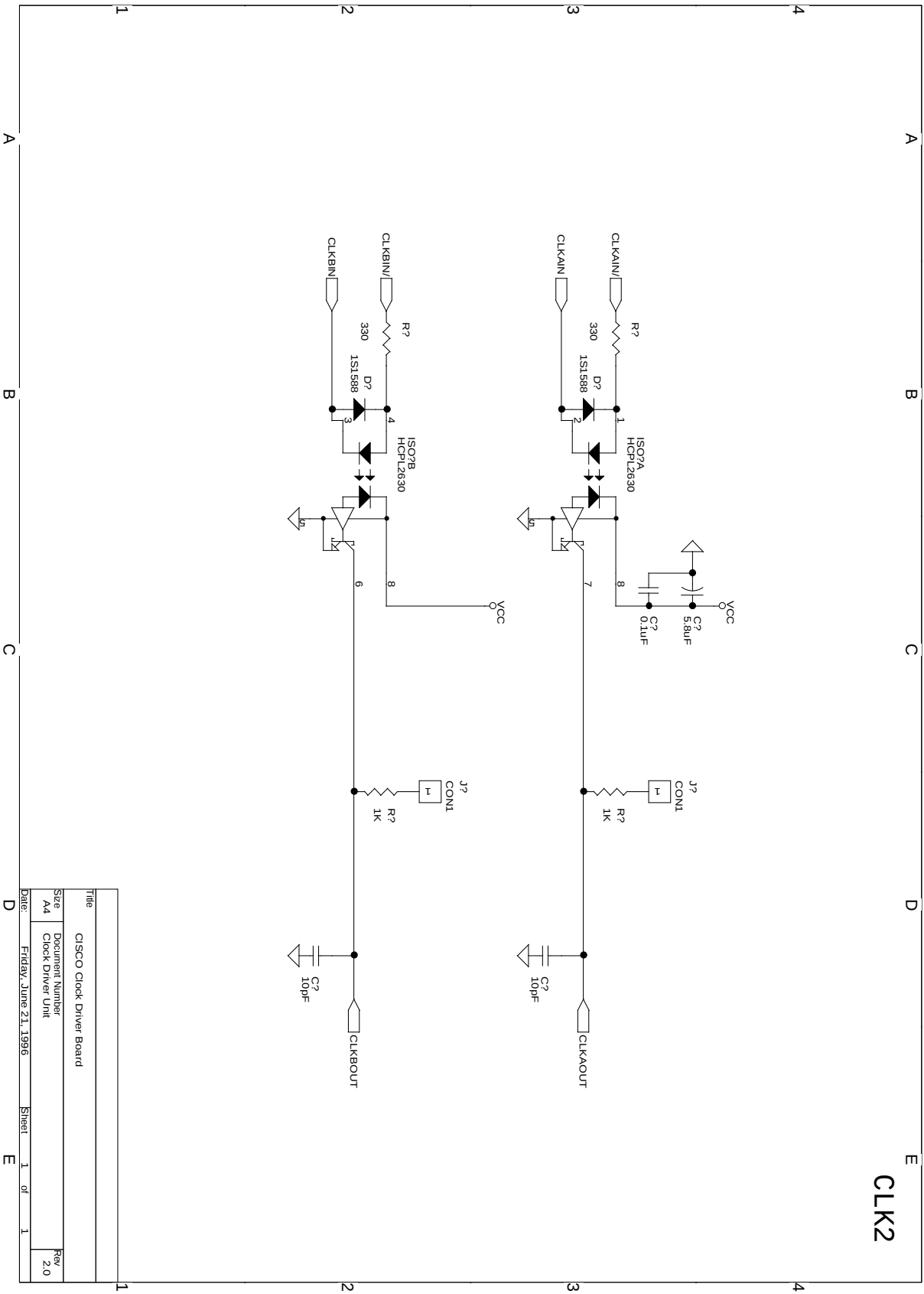


B.1.4 クロックドライバボード









B.2 実装部品定数一覧

B.2.1 ファンアウトボード

FET の ID は 1995 年 5 月に特性を調べたときにつけたもの。それぞれの特性は当時のレポートを参照のこと。

部品番号	ID	種類	部品番号	ID	種類
QA1	g	J270	QC1	j	J270
QA2	h	J270	QC2	r	J270
QB1	i	J270	QD1	p	J270
QB2	g	J270	QD2	t	J270

部品番号	回路定数 (Ω)	種類
R3	10.1	金属皮膜抵抗

部品番号	回路定数 (Ω)	種類	部品番号	回路定数 (Ω)	種類
RA1	10.0	金属皮膜抵抗	RC1	10.2	金属皮膜抵抗
RA2	200.3k	金属皮膜抵抗	RC2	200.3k	金属皮膜抵抗
RA3	200.9k	金属皮膜抵抗	RC3	200.8k	金属皮膜抵抗
RA4	200.2k	金属皮膜抵抗	RC4	201.7k	金属皮膜抵抗
RA5	5.11k	金属皮膜抵抗	RC5	5.12k	金属皮膜抵抗
RA6	5.13k	金属皮膜抵抗	RC6	5.11k	金属皮膜抵抗
RA7	10.2	金属皮膜抵抗	RC7	10.2	金属皮膜抵抗
RA8	10.2	金属皮膜抵抗	RC8	10.2	金属皮膜抵抗
RB1	10.2	金属皮膜抵抗	RD1	10.2	金属皮膜抵抗
RB2	201.4k	金属皮膜抵抗	RD2	200.5k	金属皮膜抵抗
RB3	201.5k	金属皮膜抵抗	RD3	200.9k	金属皮膜抵抗
RB4	200.9k	金属皮膜抵抗	RD4	201.8k	金属皮膜抵抗
RB5	5.12k	金属皮膜抵抗	RD5	5.12k	金属皮膜抵抗
RB6	5.10k	金属皮膜抵抗	RD6	5.12k	金属皮膜抵抗
RB7	10.2	金属皮膜抵抗	RD7	10.3	金属皮膜抵抗
RB8	10.2	金属皮膜抵抗	RD8	10.2	金属皮膜抵抗

部品番号	回路定数 (F)	種類 (耐圧)
C1	1.0 μ	積層セラミック
C2	10 μ	タンタル (35V)

番号	回路定数 (F)	種類 (耐圧)	番号	回路定数 (F)	種類 (耐圧)
CA1	1.0μ	積層セラミック	CC1	1.0μ	積層セラミック
CA2	1.0μ	積層セラミック	CC2	1.0μ	積層セラミック
CA3	10μ	タンタル (35V)	CC3	10μ	タンタル (35V)
CA4	1.0μ	積層セラミック	CC4	1.0μ	積層セラミック
CA5	1.0μ	積層セラミック	CC5	1.0μ	積層セラミック
CA6	10μ	タンタル (35V)	CC6	10μ	タンタル (35V)
CA7	10μ	タンタル (35V)	CC7	10μ	タンタル (35V)
CA8	1.0μ	積層セラミック	CC8	1.0μ	積層セラミック
CA9	—	—	CC9	—	—
CB1	1.0μ	積層セラミック	CD1	1.0μ	積層セラミック
CB2	1.0μ	積層セラミック	CD2	1.0μ	積層セラミック
CB3	10μ	タンタル (35V)	CD3	10μ	タンタル (35V)
CB4	1.0μ	積層セラミック	CD4	1.0μ	積層セラミック
CB5	1.0μ	積層セラミック	CD5	1.0μ	積層セラミック
CB6	10μ	タンタル (35V)	CD6	10μ	タンタル (35V)
CB7	10μ	タンタル (35V)	CD7	10μ	タンタル (35V)
CB8	1.0μ	積層セラミック	CD8	1.0μ	積層セラミック
CB9	—	—	CD9	—	—

B.2.2 プリアンプボード

部品番号	回路定数 (Ω)	種類	部品番号	回路定数 (Ω)	種類
R1			R33	-	
R2			R34	99.8	金属皮膜抵抗
R3			R35	239.9	金属皮膜抵抗
R4			R36	10.1	金属皮膜抵抗
R5	1.003k	金属皮膜抵抗	R37	0.560k	金属皮膜抵抗
R6	1.001k	金属皮膜抵抗	R38	160.6	金属皮膜抵抗
R7	-		R39	240.5	金属皮膜抵抗
R8	1.007k	金属皮膜抵抗	R40	3.006k	金属皮膜抵抗
R9	0.821k	金属皮膜抵抗	R41	1.002k	金属皮膜抵抗
R10	9.99k	金属皮膜抵抗	R42	0	-
R11	240.4k	金属皮膜抵抗	R43	1.006k	金属皮膜抵抗
R12	1.000k	金属皮膜抵抗	R44	0.569k	金属皮膜抵抗
R13	159.5	金属皮膜抵抗	R45	159.7	金属皮膜抵抗
R14	1.004k	金属皮膜抵抗	R46	5k	可変抵抗
R15	1.002k	金属皮膜抵抗	R47	10.0	金属皮膜抵抗
R16	0.562k	金属皮膜抵抗	R48		
R17	1.298k	金属皮膜抵抗	R49		
R18	10.01k	金属皮膜抵抗	R50		
R19	-		R51		
R20	1.003k	金属皮膜抵抗	R52		
R21	1.000k	金属皮膜抵抗	R53		
R22	239.5	金属皮膜抵抗	R54		
R23	-		R55		
R24	1.003k	金属皮膜抵抗	R56		
R25	0.566k	金属皮膜抵抗	R57		
R26	159.5	金属皮膜抵抗	R58		
R27	240.2	金属皮膜抵抗	R59		
R28	0.560k	金属皮膜抵抗	R60		
R29	159.7	金属皮膜抵抗	R61		
R30	-		R62		
R31	1.005k	金属皮膜抵抗	R63		
R32	0				

部品番号	回路定数 (Ω)	種類	部品番号	回路定数 (Ω)	種類
RA1	10.2	金属皮膜抵抗	RC1	10.2	金属皮膜抵抗
RA2	1.002k	金属皮膜抵抗	RC2	1.005k	金属皮膜抵抗
RA3	100.0	金属皮膜抵抗	RC3	100.3	金属皮膜抵抗
RA4	0.511k	金属皮膜抵抗	RC4	0.512k	金属皮膜抵抗
RA5	10.2	金属皮膜抵抗	RC5	10.1	金属皮膜抵抗
RA6	10.1	金属皮膜抵抗	RC6	10.2	金属皮膜抵抗
RA7	0.514k	金属皮膜抵抗	RC7	0.512k	金属皮膜抵抗
RA8	1.003k	金属皮膜抵抗	RC8	1.001k	金属皮膜抵抗
RA9	0		RC9	0	
RA10	10.1	金属皮膜抵抗	RC10	10.2	金属皮膜抵抗
RA11	10.1	金属皮膜抵抗	RC11	10.2	金属皮膜抵抗
RA12	0.511k	金属皮膜抵抗	RC12	0.512k	金属皮膜抵抗
RA13	0.514k	金属皮膜抵抗	RC13	0.512k	金属皮膜抵抗
RA14	100.0	金属皮膜抵抗	RC14	100.3	金属皮膜抵抗
RA15	1.003k	金属皮膜抵抗	RC15	1.005k	金属皮膜抵抗
RA16	0		RC16	0	
RA17	10.0	金属皮膜抵抗	RC17	10.2	金属皮膜抵抗
RB1	10.1	金属皮膜抵抗	RD1	10.1	金属皮膜抵抗
RB2	1.003k	金属皮膜抵抗	RD2	1.006k	金属皮膜抵抗
RB3	100.3	金属皮膜抵抗	RD3	?	
RB4	0.512k	金属皮膜抵抗	RD4	0.513k	金属皮膜抵抗
RB5	10.2	金属皮膜抵抗	RD5	10.1	金属皮膜抵抗
RB6	10.1	金属皮膜抵抗	RD6	10.1	金属皮膜抵抗
RB7	0.512k	金属皮膜抵抗	RD7	0.512k	金属皮膜抵抗
RB8	1.001k	金属皮膜抵抗	RD8	1.002k	金属皮膜抵抗
RB9	0		RD9	0	
RB10	10.1	金属皮膜抵抗	RD10	10.1	金属皮膜抵抗
RB11	10.1	金属皮膜抵抗	RD11	10.2	金属皮膜抵抗
RB12	0.512k	金属皮膜抵抗	RD12	0.513k	金属皮膜抵抗
RB13	0.512k	金属皮膜抵抗	RD13	0.512k	金属皮膜抵抗
RB14	100.3	金属皮膜抵抗	RD14	?	
RB15	1.003k	金属皮膜抵抗	RD15	1.004k	金属皮膜抵抗
RB16	0		RD16	0	
RB17	10.1	金属皮膜抵抗	RD17	10.2	金属皮膜抵抗

番号	回路定数 (F)	種類 (耐圧)	番号	回路定数 (F)	種類 (耐圧)
C1	0.1 μ	積層セラミック	C16	6.8 μ	タンタル (35V)
C2	100 μ	電解 (50V)	C17	100 μ	電解 (50V)
C3	100 μ	電解 (50V)	C18	0.1 μ	積層セラミック
C4	0.1 μ	積層セラミック	C19	0.1 μ	積層セラミック
C5	100 μ	電解 (50V)	C20	-	
C6	0.1 μ	積層セラミック	C21	6.8 μ	タンタル (35V)
C7	0.1 μ	積層セラミック	C22	0.1 μ	積層セラミック
C8	6.8 μ	タンタル (35V)	C23	100 μ	電解 (50V)
C9	0.1 μ	積層セラミック	C24	0.1 μ	積層セラミック
C10	100 μ	電解 (50V)	C25	6.8 μ	タンタル (35V)
C11	100 μ	電解 (50V)	C26	0.1 μ	積層セラミック
C12	0.1 μ	積層セラミック	C27	6.8 μ	タンタル (35V)
C13	100 μ	電解 (50V)	C28	100 μ	電解 (50V)
C14	0.1 μ	積層セラミック	C29	0.1 μ	積層セラミック
C15	0.1 μ	積層セラミック	C30	0.1 μ	積層セラミック

番号	回路定数 (F)	種類 (耐圧)	番号	回路定数 (Ω)	種類 (耐圧)
C31	-		C47	-	
C32	6.8 μ	タンタル (35V)	C48	-	
C33	0.1 μ	積層セラミック	C49	-	
C34	6.8 μ	タンタル (35V)	C50	-	
C35	-		C51	-	
C36	-		C52	-	
C37	-		C53	-	
C38	-		C54	-	
C39	-		C55	-	
C40	-		C56	-	
C41	-		C57	-	
C42	-		C58	-	
C43	-		C59	-	
C44	-		C60	-	
C45	-		C61	-	
C46	-		C62	-	

番号	回路定数 (F)	種類 (耐圧)	番号	回路定数 (F)	種類 (耐圧)
CA1	0.1 μ	積層セラミック	CC1	0.1 μ	積層セラミック
CA2	6.8 μ	タンタル	CC2	6.8 μ	タンタル
CA3	10p	積層セラミック	CC3	10p	積層セラミック
CA4	6.8 μ	タンタル (35V)	CC4	6.8 μ	タンタル (35V)
CA5	22p	積層セラミック	CC5	22p	積層セラミック
CA6	0.1 μ	積層セラミック	CC6	0.1 μ	積層セラミック
CA7	0.1 μ	積層セラミック	CC7	0.1 μ	積層セラミック
CA8	6.8 μ	タンタル (35V)	CC8	6.8 μ	タンタル (35V)
CA9	-		CC9	-	
CA10	6.8 μ	タンタル (35V)	CC10	6.8 μ	タンタル (35V)
CA11	6.8 μ	タンタル (35V)	CC11	6.8 μ	タンタル (35V)
CA12	22p	積層セラミック	CC12	22p	積層セラミック
CA13	0.1 μ	積層セラミック	CC13	0.1 μ	積層セラミック
CA14	22p	積層セラミック	CC14	22p	積層セラミック
CA15	0.1 μ	積層セラミック	CC15	0.1 μ	積層セラミック
CA16	10p	積層セラミック	CC16	10p	積層セラミック
CA17	100p	積層セラミック	CC17	100p	積層セラミック
CA18	0.1 μ	積層セラミック	CC18	0.1 μ	積層セラミック
CA19	6.8 μ	タンタル (35V)	CC19	6.8 μ	タンタル (35V)
CB1	0.1 μ	積層セラミック	CD1	0.1 μ	積層セラミック
CB2	6.8 μ	タンタル	CD2	6.8 μ	タンタル
CB3	10p	積層セラミック	CD3	10p	積層セラミック
CB4	6.8 μ	タンタル (35V)	CD4	6.8 μ	タンタル (35V)
CB5	22p	積層セラミック	CD5	22p	積層セラミック
CB6	0.1 μ	積層セラミック	CD6	0.1 μ	積層セラミック
CB7	0.1 μ	積層セラミック	CD7	0.1 μ	積層セラミック
CB8	6.8 μ	タンタル (35V)	CD8	6.8 μ	タンタル (35V)
CB9	-		CD9	-	
CB10	6.8 μ	タンタル (35V)	CD10	6.8 μ	タンタル (35V)
CB11	6.8 μ	タンタル (35V)	CD11	6.8 μ	タンタル (35V)
CB12	22p	積層セラミック	CD12	22p	積層セラミック
CB13	0.1 μ	積層セラミック	CD13	0.1 μ	積層セラミック
CB14	22p	積層セラミック	CD14	22p	積層セラミック
CB15	0.1 μ	積層セラミック	CD15	0.1 μ	積層セラミック
CB16	10p	積層セラミック	CD16	10p	積層セラミック
CB17	100p	積層セラミック	CD17	100p	積層セラミック
CB18	0.1 μ	積層セラミック	CD18	0.1 μ	積層セラミック
CB19	6.8 μ	タンタル (35V)	CD19	6.8 μ	タンタル (35V)

B.2.3 クロックドライバボード

番号	回路定数 (Ω)	種類	番号	回路定数 (Ω)	種類
R3	0.0		R59	0.0	
R4	10.2	金属皮膜抵抗	R60	10.2	金属皮膜抵抗
R5	329.5	金属皮膜抵抗	R73	1.000k	金属皮膜抵抗
R6	1.006k	金属皮膜抵抗	R74	1.001k	金属皮膜抵抗
R7	10	金属皮膜抵抗	R75	1.002k	金属皮膜抵抗
R8	329.2	金属皮膜抵抗	R76	1.001k	金属皮膜抵抗
R9	1.001k	金属皮膜抵抗	R77	823	金属皮膜抵抗
R10	10	金属皮膜抵抗	R78	240.7	金属皮膜抵抗
R11	0.0		R79	565	金属皮膜抵抗
R12	10.2	金属皮膜抵抗	R80	10.01k	金属皮膜抵抗
R17	331.2	金属皮膜抵抗	R81	159.2	金属皮膜抵抗
R19	10.1	金属皮膜抵抗	R82	1.004k	金属皮膜抵抗
R20	329.8	金属皮膜抵抗	R83	0.998k	金属皮膜抵抗
R22	10	金属皮膜抵抗	R84	1.000k	金属皮膜抵抗
R29	330.8	金属皮膜抵抗	R85	1.006k	金属皮膜抵抗
R32	330.0	金属皮膜抵抗	R86	1.299k	金属皮膜抵抗
R41	329.4	金属皮膜抵抗	R87	10.06k	金属皮膜抵抗
R43	10	金属皮膜抵抗	R88	0.998k	金属皮膜抵抗
R44	329.0	金属皮膜抵抗	R91	0.0	
R46	10	金属皮膜抵抗	R92	10.2	金属皮膜抵抗
R51	0.0		R93	329.5	金属皮膜抵抗
R52	10.2	金属皮膜抵抗	R94	1.000k	金属皮膜抵抗
R53	329.3	金属皮膜抵抗	R95	10	金属皮膜抵抗
R54	1.001k	金属皮膜抵抗	R96	329.5	金属皮膜抵抗
R55	10	金属皮膜抵抗	R97	1.001k	金属皮膜抵抗
R56	330.4	金属皮膜抵抗	R98	10	金属皮膜抵抗
R57	1.004k	金属皮膜抵抗	R99	0.0	
R58	10	金属皮膜抵抗	R100	10.3	金属皮膜抵抗

番号	回路定数 (F)	種類 (耐圧)	番号	回路定数 (F)	種類 (耐圧)
C2	0.1 μ	積層セラミック	C72	0.1 μ	積層セラミック
C3	6.8 μ	タンタル (25V)	C79	0.1 μ	積層セラミック
C4	6.8 μ	タンタル (25V)	C80	100 μ	電解 (50V)
C5	6.8 μ	タンタル (25V)	C81	0.1 μ	積層セラミック
C7	0.1 μ	積層セラミック	C82	100 μ	電解 (50V)
C8	0.1 μ	積層セラミック	C83	0.1 μ	積層セラミック
C9	0.1 μ	積層セラミック	C84	100 μ	電解 (50V)
C10	6.8 μ	タンタル (25V)	C85	100 μ	電解 (50V)
C11	6.8 μ	タンタル (25V)	C86	0.1 μ	積層セラミック
C12	0.1 μ	積層セラミック	C87	100 or 0.1 ? μ	
C17	6.8 μ	タンタル (25V)	C88	μ	
C20	0.1 μ	積層セラミック	C89	0.1 μ	積層セラミック
C30	6.8 μ	タンタル (25V)	C90	100 μ	電解 (50V)
C33	0.1 μ	積層セラミック	C91	100 μ	電解 (50V)
C43	6.8 μ	タンタル (25V)	C92	100 μ	電解 (50V)
C46	0.1 μ	積層セラミック	C94	0.1 μ	積層セラミック
C54	0.1 μ	積層セラミック	C95	6.8 μ	タンタル (25V)
C55	6.8 μ	タンタル (25V)	C96	6.8 μ	タンタル (25V)
C56	6.8 μ	タンタル (25V)	C97	6.8 μ	タンタル (25V)
C57	6.8 μ	タンタル (25V)	C99	0.1 μ	積層セラミック
C59	0.1 μ	積層セラミック	C100	0.1 μ	積層セラミック
C60	0.1 μ	積層セラミック	C101	0.1 μ	積層セラミック
C61	0.1 μ	積層セラミック	C102	6.8 μ	タンタル (25V)
C62	6.8 μ	タンタル (25V)	C103	6.8 μ	タンタル (25V)
C63	6.8 μ	タンタル (25V)	C104	0.1 μ	積層セラミック
C64	0.1 μ	積層セラミック	C106	0.1 μ	積層セラミック
C69	6.8 μ	タンタル (25V)	C107	6.8 μ	タンタル (25V)

付 録 C クロック制御プログラムソース

C.1 cpg.ascii

[illegible]


```

#
# ----- #
# Clock patterns to read HAWAII #
# ----- #
set_clock_tick          1 # 80 ns/t
operation_type          200 # NOP
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 | | | | ] | | ] | | | | | | # 1 0.08
end
#
set_clock_tick          2 # 160 ns/t
operation_type          201 # A/D 1st & 2nd Pixel
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 18 | | | | ] ] | ] | | | | | | ] # 18 2.88
t 6 ] | | | | ] ] | ] | | | | | | ] # 24 3.84
t 12 ] | | | | ] ] | ] | | | | | | ] # 36 5.76
t 6 ] | | | | ] ] | ] | | | | | | ] # 42 6.72
t 24 ] ] | | | ] ] | ] | | | | | | ] # 66 10.56
t 12 ] ] | | | ] ] | ] | | | | | | ] # 78 12.48
t 25 ] ] | | ] ] ] | ] | | | | | | ] # 103 16.48
t 2 ] ] | | ] ] ] | ] | | | | | | ] # 105 16.80
t 5 ] ] | | ] ] ] | ] | | | | | | ] # 110 17.60
t 29 ] ] | | ] ] ] | ] | | | | | | ] # 135 21.60
t 1 ] ] | | ] ] ] | ] | | | | | | ] # 136 21.76
t 1 ] ] | | ] ] ] | ] | | | | | | ] # 137 21.92
t 1 ] ] | | ] ] ] | ] | | | | | | ] # 138 22.08
end
#
set_clock_tick          2 # 160 ns/t
operation_type          202 # A/D 2 Pixels in Odd Row
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 ] ] | | ] ] ] | ] | | | | | | # 1 0.16
t 1 ] ] | | ] ] ] | ] | | | | | | # 2 0.32
t 1 ] ] | | ] ] ] | ] | | | | | | # 3 0.48
t 1 ] ] | | ] ] ] | ] | | | | | | # 4 0.64
t 1 ] ] | | ] ] ] | ] | | | | | | # 5 0.80
t 1 ] ] | | ] ] ] | ] | | | | | | # 6 0.96
t 1 ] ] | | ] ] ] | ] | | | | | | # 7 1.12
t 1 ] ] | | ] ] ] | ] | | | | | | # 8 1.28
t 1 ] ] | | ] ] ] | ] | | | | | | # 9 1.44
t 1 ] ] | | ] ] ] | ] | | | | | | # 10 1.60
t 1 ] ] | | ] ] ] | ] | | | | | | # 11 1.76
t 1 ] ] | | ] ] ] | ] | | | | | | # 12 1.92
t 1 ] ] | | ] ] ] | ] | | | | | | # 13 2.08
t 1 ] ] | | ] ] ] | ] | | | | | | # 14 2.24
t 1 ] ] | | ] ] ] | ] | | | | | | # 15 2.40
t 1 ] ] | | ] ] ] | ] | | | | | | # 16 2.56
t 1 ] ] | | ] ] ] | ] | | | | | | # 17 2.72
t 1 ] ] | | ] ] ] | ] | | | | | | # 18 2.88
t 1 ] ] | | ] ] ] | ] | | | | | | # 19 3.04
t 1 ] ] | | ] ] ] | ] | | | | | | # 20 3.20
t 1 ] ] | | ] ] ] | ] | | | | | | # 21 3.36
t 1 ] ] | | ] ] ] | ] | | | | | | # 22 3.52
t 1 ] ] | | ] ] ] | ] | | | | | | # 23 3.68
t 1 ] ] | | ] ] ] | ] | | | | | | # 24 3.84
t 1 ] ] | | ] ] ] | ] | | | | | | # 25 4.00
t 1 ] ] | | ] ] ] | ] | | | | | | # 26 4.16
t 1 ] ] | | ] ] ] | ] | | | | | | # 27 4.32
t 1 ] ] | | ] ] ] | ] | | | | | | # 28 4.48
t 1 ] ] | | ] ] ] | ] | | | | | | # 29 4.64
t 1 ] ] | | ] ] ] | ] | | | | | | # 30 4.80
t 1 ] ] | | ] ] ] | ] | | | | | ] # 31 4.96
t 1 ] ] | | ] ] ] | ] | | | | ] | # 32 5.12
t 1 ] ] | | ] ] ] | ] | | | ] | | # 33 5.28

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t 1 ] ] | | ] ] | | | | | | | | # 35 5.60
t 1 ] ] | | ] ] | | ] | | | | | | | # 36 5.76
t 1 ] ] | | ] ] | | | | | | | | | | # 37 5.92
t 1 ] ] | | ] ] | | ] | | | | | | | # 38 6.08
t 1 ] ] | | ] ] | | | | | | | | | | # 39 6.24
t 1 ] ] | | ] ] | | ] | | | | | | | # 40 6.40
t 1 ] ] | | ] ] | | | | | | | | | | # 41 6.56
t 1 ] ] | | ] ] | | ] | | | | | | | # 42 6.72
t 1 ] ] | | ] ] | | | | | | | | | | # 43 6.88
t 1 ] ] | | ] ] | | ] | | | | | | | # 44 7.04
t 1 ] ] | | ] ] | | | | | | | | | | # 45 7.20
t 1 ] ] | | ] ] | | ] | | | | | | | # 46 7.36
t 1 ] ] | | ] ] | | | | | | | | | | # 47 7.52
t 1 ] ] | | ] ] | | ] | | | | | | | # 48 7.68
t 1 ] ] | | ] ] | | | | | | | | | | # 49 7.84
t 1 ] ] | | ] ] | | ] | | | | | | | # 50 8.00
t 1 ] ] | | ] ] | | | | | | | | | | # 51 8.16
t 1 ] ] | | ] ] | | ] | | | | | | | # 52 8.32
t 1 ] ] | | ] ] | | | | | | | | | | # 53 8.48
t 1 ] ] | | ] ] | | ] | | | | | | | # 54 8.64
t 1 ] ] | | ] ] | | | | | | | | | | # 55 8.80
t 1 ] ] | | ] ] | | ] | | | | | | | # 56 8.96
t 1 ] ] | | ] ] | | | | | | | | | | # 57 9.12
t 1 ] ] | | ] ] | | ] | | | | | | | # 58 9.28
t 1 ] ] | | ] ] | | | | | | | | | | # 59 9.44
t 1 ] ] | | ] ] | | ] | | | | | | | # 60 9.60
t 1 ] ] | | ] ] | | | | | | | | | | # 61 9.76
t 1 ] ] | | ] ] | | ] | | | | | | | # 62 9.92
t 1 ] ] | | ] ] | | ] | | | | | | | # 63 10.08
t 1 ] ] | | ] ] | | | | | | | | | | # 64 10.24
end
#
set_clock_tick                2 # 160 ns/t
operation_type                 204 # Start & Reset Odd Row
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 6 ] | | | | ] ] | | ] | | | | | | | # 6 0.96
t 12 ] | | | | ] ] | | ] | | | | | | | # 18 2.88
t 6 ] ] | | | ] ] | | ] | | | | | | | # 24 3.84
t 24 ] ] | | | | ] | | ] | | | | | | | # 48 7.68
t 12 ] ] | | | | ] ] | | ] | | | | | | | # 60 9.60
end
#
set_clock_tick                2 # 160 ns/t
operation_type                 205 # Start & Reset Even Row
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 6 ] | | | | ] ] | | ] | | | | | | | # 6 0.96
t 12 ] | | | | ] ] | | ] | | | | | | | # 18 2.88
t 6 ] ] | | | | ] ] | | ] | | | | | | | # 24 3.84
t 24 ] ] | | | | ] | | ] | | | | | | | # 48 7.68
t 12 ] ] | | | | ] ] | | ] | | | | | | | # 60 9.60
end
#
set_clock_tick                2 # 160 ns/t
operation_type                 206 # End
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 ] | | | | ] ] | | ] | | | | | | | # 1 0.16
t 1 ] | | | | ] ] | | ] | | | | | | | # 2 0.32
t 1 ] | | | | ] ] | | ] | | | | | | | # 3 0.48
t 1 ] | | | | ] ] | | ] | | | | | | | # 4 0.64
t 1 ] | | | | ] ] | | ] | | | | | | | # 5 0.80
t 1 ] | | | | ] ] | | ] | | | | | | | # 6 0.96
t 1 ] | | | | ] ] | | ] | | | | | | | # 7 1.12
t 1 ] | | | | ] ] | | ] | | | | | | | # 8 1.28
t 1 ] | | | | ] ] | | ] | | | | | | | # 9 1.44

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t 1 ] | | | | ] ] | | | | | | | | # 10 1.60
t 1 ] | | | | ] ] | | | | | | | | # 11 1.76
t 1 ] | | | | ] ] | | | | | | | | # 12 1.92
t 1 ] | | | | ] ] | | | | | | | | # 13 2.08
t 1 ] | | | | ] | | | | | | | | | # 14 2.24
t 1 ] | | | | ] | | | | | | | | | # 15 2.40
t 1 ] | | | | ] | | | | | | | | | # 16 2.56
t 1 ] | | | | ] | | | | | | | | | # 17 2.72
t 1 ] | | | | ] | | | | | | | | | # 18 2.88
t 1 ] | | | | ] | | | | | | | | | # 19 3.04
t 1 ] | | | | ] | | | | | | | | | # 20 3.20
t 1 ] | | | | ] | | | | | | | | | # 21 3.36
t 1 ] | | | | ] | | | | | | | | | # 22 3.52
t 1 ] | | | | ] | | | | | | | | | # 23 3.68
t 1 ] | | | | ] | | | | | | | | | # 24 3.84
t 1 | | | | ] | | | | | | | | | | # 25 4.00
t 1 | | | | ] | | | | | | | | | | # 26 4.16
t 1 | | | | ] | | | | | | | | | | # 27 4.32
t 1 | | | | ] | | | | | | | | | | # 28 4.48
t 1 | | | | ] | | | | | | | | | | # 29 4.64
t 1 | | | | ] | | ] | | | | | | | | # 30 4.80
t 1 | | | | ] | | ] | | | | | | | | # 31 4.96
t 1 | | | | ] | | ] | | | | | | | | # 32 5.12
t 1 | | | | ] | | | | | | | | | | # 33 5.28
t 1 | | | | ] | | | | | | | | | | # 34 5.44
t 1 | | | | ] | | | | | | | | | | # 35 5.60
t 1 | | | | ] | | | | | | | | | | # 36 5.76
t 1 | | | | ] | | | | | | | | | | # 37 5.92
t 1 | | | | ] | | | | | | | | | | # 38 6.08
t 1 | | | | ] | | | | | | | | | | # 39 6.24
t 1 | | | | ] | | | | | | | | | | # 40 6.40
t 1 | | | | ] | | | | | | | | | | # 41 6.56
t 1 | | | | ] | | | | | | | | | | # 42 6.72
t 1 | | | | ] | | | | | | | | | | # 43 6.88
t 1 | | | | ] | | | | | | | | | | # 44 7.04
t 1 | | | | ] | | | | | | | | | | # 45 7.20
t 1 | | | | ] | | | | | | | | | | # 46 7.36
t 1 | | | | ] | | | | | | | | | | # 47 7.52
t 1 | | | | ] | | | | | | | | | | # 48 7.68
t 1 | | | | ] | | | | | | | | | | # 49 7.84
t 1 | | | | ] | | | | | | | | | | # 50 8.00
t 1 | | | | ] | | | | | | | | | | # 51 8.16
t 1 | | | | ] | | | | | | | | | | # 52 8.32
t 1 | | | | ] | | | | | | | | | | # 53 8.48
t 1 | | | | ] | | | | | | | | | | # 54 8.64
t 1 | | | | ] | | | | | | | | | | # 55 8.80
t 1 | | | | ] | | | | | | | | | | # 56 8.96
t 1 | | | | ] | | | | | | | | | | # 57 9.12
t 1 | | | | ] | | | | | | | | | | # 54 8.64
t 1 | | | | ] | | | | | | | | | | # 55 8.80
t 1 | | | | ] | | | | | | | | | | # 56 8.96
t 1 | | | | ] | | | | | | | | | | # 57 9.12
t 1 | | | | ] | | | | | | | | | | # 58 9.28
t 2 | | | | ] | | | | | | | | ] | | # 60 9.60
t 1 | | | | ] | | | | | | | | | | # 61 9.76
end
#
set_clock_tick          2 # 160 ns/t
operation_type          207 # Start of 2nd Frame
#      80 ns/tick, total 11.36us
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 18 | | | | ] ] | ] | | | | | ] # 18 2.88
t 6 ] | | | | ] ] | ] | | | | | ] # 24 3.84
t 12 ] | | | ] ] | ] | | | | | ] # 36 5.76
t 6 ] ] | | ] ] | ] | | | | | ] # 42 6.72
t 24 ] ] | | ] ] | ] | | | | | ] # 66 10.56
t 12 ] ] | | ] ] | ] | | | | | ] # 78 12.48
t 25 ] ] ] ] ] | ] | | | | | ] # 103 16.48
t 2 ] ] ] ] ] | ] | | | | | ] # 105 16.80
t 5 ] ] ] ] ] | ] | | | | | ] # 110 17.60
t 29 ] ] | | ] ] | ] | | | | | ] # 135 21.60

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t 1 ] ] | ] ] ] ] ] | | | | | ] # 136 21.76
t 1 ] ] | ] ] ] ] ] | | | | | ] # 137 21.92
t 1 ] ] | ] ] ] ] ] | | | | | ] # 138 22.08
end
#
set_clock_tick          2 # 160 ns/t
operation_type          208 # Start of Odd Row
#      80 ns/tick, total 4.8us
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 6 ] | | | ] ] | ] | | | | | | # 6 0.96
t 12 ] | | | ] ] | ] | | | | | | # 18 2.88
t 6 ] ] | | ] ] | ] | | | | | | # 24 3.84
t 24 ] ] | | ] ] | ] | | | | | | # 48 7.68
t 12 ] ] | | ] ] | ] | | | | | | # 60 9.60
end
#
set_clock_tick          2 # 160 ns/t
operation_type          209 # Start of Even Row
#      80 ns/tick, total 4.8us
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 6 ] | | | ] ] | ] | | | | | | # 6 0.96
t 12 ] | | | ] ] | ] | | | | | | # 18 2.88
t 6 ] ] | | ] ] | ] | | | | | | # 24 3.84
t 24 ] ] | | ] ] | ] | | | | | | # 48 7.68
t 12 ] ] | | ] ] | ] | | | | | | # 60 9.60
end
#
set_clock_tick          2 # 160 ns/t
operation_type          210 # Reset Frame (Odd Row)
#      80 ns/tick
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 32 ] | | | ] | | | ] | | | | | # 32 5.12
end
#
set_clock_tick          2 # 160 ns/t
operation_type          211 # Reset Frame (Even Row)
#      80 ns/tick
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 32 ] | | | | | | | ] | | | | | # 32 5.12
end
#
set_clock_tick          2 # 160 ns/t
operation_type          214 # Start & Reset Odd Row again
#      80 ns/tick
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 6 ] | | | ] ] | ] | | | | | | # 6 0.96
t 12 ] | | | ] ] | ] | | | | | | # 18 2.88
t 6 ] ] | | ] ] | ] | | | | | | # 24 3.84
t 24 ] ] | | ] ] | ] | | | | | | # 48 7.68
t 12 ] ] | | ] ] | ] | | | | | | # 60 9.60
end
# ----- #
# Clock patterns to reset pixels during reading HAWAII #
# ----- #
set_clock_tick          2 # 160 ns/t
operation_type          271 # A/D 1st & 2nd Pixel
#      80 ns/tick
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 18 | | | | ] ] | ] | | | | | ] # 18 2.88
t 6 ] | | | ] ] | ] | | | | | | # 24 3.84
t 12 ] | | | ] ] | ] | | | | | | # 36 5.76

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t 6 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 42 6.72
t 24 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 66 10.56
t 12 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 78 12.48
t 25 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 103 16.48
t 2 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 105 16.80
t 5 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 110 17.60
t 25 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 135 21.60
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 136 21.76
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 137 21.92
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 138 22.08
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 139 22.24
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 140 22.40
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 141 22.56
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 142 22.72
end
#
set_clock_tick 2 # 160 ns/t
operation_type 272 # A/D 2 Pixels in Odd Row
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 1 0.16
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 2 0.32
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 3 0.48
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 4 0.64
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 5 0.80
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 6 0.96
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 7 1.12
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 8 1.28
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 9 1.44
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 10 1.60
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 11 1.76
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 12 1.92
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 13 2.08
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 14 2.24
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 15 2.40
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 16 2.56
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 17 2.72
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 18 2.88
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 19 3.04
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 20 3.20
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 21 3.36
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 22 3.52
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 23 3.68
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 24 3.84
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 25 4.00
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 26 4.16
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 27 4.32
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 28 4.48
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 29 4.64
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 30 4.80
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 31 4.96
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 32 5.12
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 33 5.28
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 34 5.44
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 35 5.60
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 36 5.76
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 37 5.92
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 38 6.08
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 39 6.24
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 40 6.40
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 41 6.56
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 42 6.72
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 43 6.88
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 44 7.04
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 45 7.20
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 46 7.36
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 47 7.52
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 48 7.68
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 49 7.84
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 50 8.00
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 51 8.16

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t 1 ] ] | ] | ] | ] | # 52 8.32
t 1 ] ] | ] | ] | ] | # 53 8.48
t 1 ] ] | ] | ] | ] | # 54 8.64
t 1 ] ] | ] | ] | ] | # 55 8.80
t 1 ] ] | ] | ] | ] | # 56 8.96
t 1 ] ] | ] | ] | ] | # 57 9.12
t 1 ] ] | ] | ] | ] | # 58 9.28
t 1 ] ] | ] | ] | ] | # 59 9.44
t 1 ] ] | ] | ] | ] | # 60 9.60
t 1 ] ] | ] | ] | ] | # 61 9.76
t 1 ] ] | ] | ] | ] | # 62 9.92
t 1 ] ] | ] | ] | ] | # 63 10.08
t 1 ] ] | ] | ] | ] | # 64 10.24
end
#
set_clock_tick          2 # 160 ns/t
operation_type          273 # A/D 2 Pixels in Even Row
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 ] ] ] | | ] | | | | | | | | # 1 0.16
t 1 ] ] ] | | ] | | ] | | | | | | # 2 0.32
t 1 ] ] ] | | ] | | ] | | | | | | # 3 0.48
t 1 ] ] ] | | ] | | ] | | | | | | # 4 0.64
t 1 ] ] ] | | ] | | ] | | | | | | # 5 0.80
t 1 ] ] ] | | ] | | ] | | | | | | # 6 0.96
t 1 ] ] ] | | ] | | ] | | | | | | # 7 1.12
t 1 ] ] ] | | ] | | ] | | | | | | # 8 1.28
t 1 ] ] ] | | ] | | ] | | | | | | # 9 1.44
t 1 ] ] ] | | ] | | ] | | | | | | # 10 1.60
t 1 ] ] ] | | ] | | ] | | | | | | # 11 1.76
t 1 ] ] ] | | ] | | ] | | | | | | # 12 1.92
t 1 ] ] ] | | ] | | ] | | | | | | # 13 2.08
t 1 ] ] ] | | ] | | ] | | | | | | # 14 2.24
t 1 ] ] ] | | ] | | ] | | | | | | # 15 2.40
t 1 ] ] ] | | ] | | ] | | | | | | # 16 2.56
t 1 ] ] ] | | ] | | ] | | | | | | # 17 2.72
t 1 ] ] ] | | ] | | ] | | | | | | # 18 2.88
t 1 ] ] ] | | ] | | ] | | | | | | # 19 3.04
t 1 ] ] ] | | ] | | ] | | | | | | # 20 3.20
t 1 ] ] ] | | ] | | ] | | | | | | # 21 3.36
t 1 ] ] ] | | ] | | ] | | | | | | # 22 3.52
t 1 ] ] ] | | ] | | ] | | | | | | # 23 3.68
t 1 ] ] ] | | ] | | ] | | | | | | # 24 3.84
t 1 ] ] ] | | ] | | ] | | | | | | # 25 4.00
t 1 ] ] ] | | ] | | ] | | ] | | | | # 26 4.16
t 1 ] ] ] | | ] | | ] | | ] | | | | # 27 4.32
t 1 ] ] ] | | ] | | ] | | ] | | | | # 28 4.48
t 1 ] ] ] | | ] | | ] | | ] | | | | # 29 4.64
t 1 ] ] ] | | ] | | ] | | ] | | | | # 30 4.80
t 1 ] ] ] | | ] | | ] | | ] | | | | # 31 4.96
t 1 ] ] ] | | ] | | ] | | ] | | | | # 32 5.12
t 1 ] ] ] | | ] | | ] | | ] | | | | # 33 5.28
t 1 ] ] ] | | ] | | ] | | ] | | | | # 34 5.44
t 1 ] ] ] | | ] | | ] | | ] | | | | # 35 5.60
t 1 ] ] ] | | ] | | ] | | ] | | | | # 36 5.76
t 1 ] ] ] | | ] | | ] | | ] | | | | # 37 5.92
t 1 ] ] ] | | ] | | ] | | ] | | | | # 38 6.08
t 1 ] ] ] | | ] | | ] | | ] | | | | # 39 6.24
t 1 ] ] ] | | ] | | ] | | ] | | | | # 40 6.40
t 1 ] ] ] | | ] | | ] | | ] | | | | # 41 6.56
t 1 ] ] ] | | ] | | ] | | ] | | | | # 42 6.72
t 1 ] ] ] | | ] | | ] | | ] | | | | # 43 6.88
t 1 ] ] ] | | ] | | ] | | ] | | | | # 44 7.04
t 1 ] ] ] | | ] | | ] | | ] | | | | # 45 7.20
t 1 ] ] ] | | ] | | ] | | ] | | | | # 46 7.36
t 1 ] ] ] | | ] | | ] | | ] | | | | # 47 7.52
t 1 ] ] ] | | ] | | ] | | ] | | | | # 48 7.68
t 1 ] ] ] | | ] | | ] | | ] | | | | # 49 7.84
t 1 ] ] ] | | ] | | ] | | ] | | | | # 50 8.00
t 1 ] ] ] | | ] | | ] | | ] | | | | # 51 8.16
t 1 ] ] ] | | ] | | ] | | ] | | | | # 52 8.32

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t 1 ] ] | | | ] | | | | | | | | # 53 8.48
t 1 ] ] | | | ] | | ] | | | | | | | # 54 8.64
t 1 ] ] | | | ] | | | | | | | | | | # 55 8.80
t 1 ] ] | | | ] | | ] | | | | | | | # 56 8.96
t 1 ] ] | | | ] | | | | | | | | | | # 57 9.12
t 1 ] ] | | | ] ] ] | | | | | | | | # 58 9.28
t 1 ] ] | | | ] ] ] | | | | | | ] | | # 59 9.44
t 1 ] ] | | | ] | ] | | | | | | ] | | # 60 9.60
t 1 ] ] | | | ] | | | | | | | | | | # 61 9.76
t 1 ] ] | | | ] | | ] | | | | | | | | # 62 9.92
t 1 ] ] | | | ] | | | | | | | | | | # 63 10.08
t 1 ] ] | | | ] | | ] | | | | | | | | # 64 10.24
end
#
set_clock_tick                2 # 160 ns/t
operation_type                 274 # Start & Reset Odd Row
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 6 ] | | | | ] | | ] | | | | | | | # 6 0.96
t 12 ] | | | ] | ] | | ] | | | | | | | # 18 2.88
t 6 ] ] | | | ] | | ] | | | | | | | | # 24 3.84
t 24 ] ] | | ] | | ] | | ] | | | | | | | # 48 7.68
t 12 ] ] | | ] | | ] | | ] | | | | | | | # 60 9.60
end
#
set_clock_tick                2 # 160 ns/t
operation_type                 275 # Start & Reset Even Row
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 6 ] | | | ] | | ] | | ] | | | | | | | # 6 0.96
t 12 ] | | | | | | ] | | ] | | | | | | | # 18 2.88
t 6 ] ] | | | ] | | ] | | ] | | | | | | | # 24 3.84
t 24 ] ] | | | ] | | ] | | ] | | | | | | | # 48 7.68
t 12 ] ] | | | ] | | ] | | ] | | | | | | | # 60 9.60
end
#
set_clock_tick                2 # 160 ns/t
operation_type                 276 # End
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 ] | | | | | ] | | | | | | | | | | # 1 0.16
t 1 ] | | | | | ] | | ] | | | | | | | | # 2 0.32
t 1 ] | | | | | ] | | | | | | | | | | # 3 0.48
t 1 ] | | | | | ] | | ] | | | | | | | | # 4 0.64
t 1 ] | | | | | ] | | | | | | | | | | # 5 0.80
t 1 ] | | | | | ] | | ] | | | | | | | | # 6 0.96
t 1 ] | | | | | ] | | | | | | | | | | # 7 1.12
t 1 ] | | | | | ] | | ] | | | | | | | | # 8 1.28
t 1 ] | | | | | ] | | | | | | | | | | # 9 1.44
t 1 ] | | | | | ] | | | | | | | | | | # 10 1.60
t 1 ] | | | | | ] | | | | | | | | | | # 11 1.76
t 1 ] | | | | | ] | | ] | | | | | | | | # 12 1.92
t 1 ] | | | | | | | | | | | | | | | | # 13 2.08
t 1 ] | | | | | | | | ] | | | | | | | | # 14 2.24
t 1 ] | | | | | | | | | | | | | | | | # 15 2.40
t 1 ] | | | | | | | | | | ] | | | | | | | # 16 2.56
t 1 ] | | | | | | | | | | | | | | | | # 17 2.72
t 1 ] | | | | | | | | | | ] | | | | | | | # 18 2.88
t 1 ] | | | | | | | | | | | | | | | | # 19 3.04
t 1 ] | | | | | | | | | | ] | | | | | | | # 20 3.20
t 1 ] | | | | | | | | | | | | | | | | # 21 3.36
t 1 ] | | | | | | | | | | ] | | | | | | | # 22 3.52
t 1 ] | | | | | | | | | | | | | | | | # 23 3.68
t 1 ] | | | | | | | | | | ] | | | | | | | # 24 3.84
t 1 | | | | | | | | | | | | | | | | | # 25 4.00
t 1 | | | | | | | | ] ] | | | | | | | | | # 26 4.16
t 1 | | | | | | | | ] | | | | | | | ] | | # 27 4.32

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t 1 | | | | | | | | ] | | | | | | | ] | | # 28 4.48
t 1 | | | | | | | | | | | | | | | | | | | | # 29 4.64
t 1 | | | | | | | | ] | | | | | | | | | | | # 30 4.80
t 1 | | | | | | | ] | | | | | | | | | | | | # 31 4.96
t 1 | | | | | | | ] | | | | | | | | | | | | # 32 5.12
t 1 | | | | | | | ] | | | | | | | | | | | | # 33 5.28
t 1 | | | | | | | ] | | | | | | | | | | | | # 34 5.44
t 1 | | | | | | | ] | | | | | | | | | | | | # 35 5.60
t 1 | | | | | | | ] | | | | | | | | | | | | # 36 5.76
t 1 | | | | | | | ] | | | | | | | | | | | | # 37 5.92
t 1 | | | | | | | ] | | | | | | | | | | | | # 38 6.08
t 1 | | | | | | | ] | | | | | | | | | | | | # 39 6.24
t 1 | | | | | | | ] | | | | | | | | | | | | # 40 6.40
t 1 | | | | | | | ] | | | | | | | | | | | | # 41 6.56
t 1 | | | | | | | ] | | | | | | | | | | | | # 42 6.72
t 1 | | | | | | | ] | | | | | | | | | | | | # 43 6.88
t 1 | | | | | | | ] | | | | | | | | | | | | # 44 7.04
t 1 | | | | | | | ] | | | | | | | | | | | | # 45 7.20
t 1 | | | | | | | ] | | | | | | | | | | | | # 46 7.36
t 1 | | | | | | | ] | | | | | | | | | | | | # 47 7.52
t 1 | | | | | | | ] | | | | | | | | | | | | # 48 7.68
t 1 | | | | | | | ] | | | | | | | | | | | | # 49 7.84
t 1 | | | | | | | ] | | | | | | | | | | | | # 50 8.00
t 1 | | | | | | | ] | | | | | | | | | | | | # 51 8.16
t 1 | | | | | | | ] | | | | | | | | | | | | # 52 8.32
t 1 | | | | | | | ] | | | | | | | | | | | | # 53 8.48
t 1 | | | | | | | ] | | | | | | | | | | | | # 54 8.64
t 1 | | | | | | | ] | | | | | | | | | | | | # 55 8.80
t 1 | | | | | | | ] | | | | | | | | | | | | # 56 8.96
t 1 | | | | | | | ] | | | | | | | | | | | | # 57 9.12
t 1 | | | | | | | ] | | | | | | | | | | | | # 58 9.28
t 2 | | | | | | | ] | | | | | | | | | | | ] | | # 60 9.60
t 1 | | | | | | | ] | | | | | | | | | | | | # 61 9.76
end
#
# ----- #
#      Wait Clock      #
# ----- #
set_clock_tick          2 # 160 ns/tick
operation_type          301 #
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 | | | | ] | | ] | | | | | | | |
end
# ----- #
#      Clock patterns to read HAWAII      #
#      without "Load"      #
# ----- #
set_clock_tick          2 # 160 ns/t
operation_type          402 # A/D 2 Pixels in Odd Row
#      80 ns/tick, total 5.12us
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 | ] ] ] ] ] ] | | | | | | | | # 1 0.16
t 1 | ] ] ] ] ] ] | | ] | | | | | | # 2 0.32
t 1 | ] ] ] ] ] ] | | | | | | | | | # 3 0.48
t 1 | ] ] ] ] ] ] | | ] | | | | | | # 4 0.64
t 1 | ] ] ] ] ] ] | | | | | | | | | # 5 0.80
t 1 | ] ] ] ] ] ] | | ] | | | | | | # 6 0.96
t 1 | ] ] ] ] ] ] | | | | | | | | | # 7 1.12
t 1 | ] ] ] ] ] ] | | ] | | | | | | # 8 1.28
t 1 | ] ] ] ] ] ] | | | | | | | | | # 9 1.44
t 1 | ] ] ] ] ] ] | | ] | | | | | | # 10 1.60
t 1 | ] ] ] ] ] ] | | | | | | | | | # 11 1.76
t 1 | ] ] ] ] ] ] | | ] | | | | | | # 12 1.92
t 1 | ] ] ] ] ] ] | | | | | | | | | # 13 2.08
t 1 | ] ] ] ] ] ] | | ] | | | | | | # 14 2.24
t 1 | ] ] ] ] ] ] | | | | | | | | | # 15 2.40
t 1 | ] ] ] ] ] ] | | ] | | | | | | # 16 2.56
t 1 | ] ] ] ] ] ] | | | | | | | | | # 17 2.72
t 1 | ] ] ] ] ] ] | | ] | | | | | | # 18 2.88

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t 1 ] ] ] ] ] ] ] | | | | | | | | # 19 3.04
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 20 3.20
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 21 3.36
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 22 3.52
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 23 3.68
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 24 3.84
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 25 4.00
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 26 4.16
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 27 4.32
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 28 4.48
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 29 4.64
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 30 4.80
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 31 4.96
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 32 5.12
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 33 5.28
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 34 5.44
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 35 5.60
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 36 5.76
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 37 5.92
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 38 6.08
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 39 6.24
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 40 6.40
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 41 6.56
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 42 6.72
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 43 6.88
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 44 7.04
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 45 7.20
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 46 7.36
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 47 7.52
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 48 7.68
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 49 7.84
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 50 8.00
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 51 8.16
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 52 8.32
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 53 8.48
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 54 8.64
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 55 8.80
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 56 8.96
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 57 9.12
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 58 9.28
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 59 9.44
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 60 9.60
t 1 ] ] ] ] ] ] ] | | | | | | | | | | # 61 9.76
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 62 9.92
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 63 10.08
t 1 ] ] ] ] ] ] ] | | ] | | | | | | | # 64 10.24
end
#
set_clock_tick 2 # 160 ns/t
operation_type 403 # A/D 2 Pixels in Even Row
# 80 ns/tick, total 5.12us
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 ] ] ] | ] ] ] | | | | | | | | # 1 0.16
t 1 ] ] ] | ] ] ] | | ] | | | | | | | # 2 0.32
t 1 ] ] ] | ] ] ] | | | | | | | | | | # 3 0.48
t 1 ] ] ] | ] ] ] | | ] | | | | | | | # 4 0.64
t 1 ] ] ] | ] ] ] | | ] | | | | | | | # 5 0.80
t 1 ] ] ] | ] ] ] | | ] | | | | | | | # 6 0.96
t 1 ] ] ] | ] ] ] | | | | | | | | | | # 7 1.12
t 1 ] ] ] | ] ] ] | | ] | | | | | | | # 8 1.28
t 1 ] ] ] | ] ] ] | | | | | | | | | | # 9 1.44
t 1 ] ] ] | ] ] ] | | ] | | | | | | | # 10 1.60
t 1 ] ] ] | ] ] ] | | | | | | | | | | # 11 1.76
t 1 ] ] ] | ] ] ] | | ] | | | | | | | # 12 1.92
t 1 ] ] ] | ] ] ] | | | | | | | | | | # 13 2.08
t 1 ] ] ] | ] ] ] | | ] | | | | | | | # 14 2.24
t 1 ] ] ] | ] ] ] | | | | | | | | | | # 15 2.40
t 1 ] ] ] | ] ] ] | | ] | | | | | | | # 16 2.56
t 1 ] ] ] | ] ] ] | | | | | | | | | | # 17 2.72
t 1 ] ] ] | ] ] ] | | ] | | | | | | | # 18 2.88
t 1 ] ] ] | ] ] ] | | | | | | | | | | # 19 3.04

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t 1 ] ] ] | ] ] | ] | | | | | | # 20 3.20
t 1 ] ] ] | ] ] | ] | | | | | | # 21 3.36
t 1 ] ] ] | ] ] | ] | ] | | | | | # 22 3.52
t 1 ] ] ] | ] ] | ] | ] | | | | | # 23 3.68
t 1 ] ] ] | ] ] | ] | ] | | | | | # 24 3.84
t 1 ] ] ] | ] ] | ] | ] | | | | | # 25 4.00
t 1 ] ] ] | ] ] | ] | ] | | | | | # 26 4.16
t 1 ] ] ] | ] ] | ] | ] | | | | | # 27 4.32
t 1 ] ] ] | ] ] | ] | ] | | | | | # 28 4.48
t 1 ] ] ] | ] ] | ] | ] | | | | | # 29 4.64
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 30 4.80
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 31 4.96
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 32 5.12
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 33 5.28
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 34 5.44
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 35 5.60
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 36 5.76
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 37 5.92
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 38 6.08
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 39 6.24
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 40 6.40
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 41 6.56
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 42 6.72
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 43 6.88
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 44 7.04
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 45 7.20
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 46 7.36
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 47 7.52
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 48 7.68
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 49 7.84
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 50 8.00
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 51 8.16
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 52 8.32
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 53 8.48
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 54 8.64
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 55 8.80
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 56 8.96
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 57 9.12
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 58 9.28
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 59 9.44
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 60 9.60
t 1 ] ] ] | ] ] | ] ] ] | | | | | # 61 9.76
t 1 ] ] ] | ] ] | ] ] ] | ] ] | | | | | # 62 9.92
t 1 ] ] ] | ] ] | ] ] ] | ] ] | | | | | # 63 10.08
t 1 ] ] ] | ] ] | ] ] ] | ] ] | | | | | # 64 10.24
end
#
set_clock_tick          2 # 160 ns/t
operation_type          406 # End
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 ] | | | | ] ] | | | | | | | | # 1 0.16
t 1 ] | | | | ] ] | ] | | | | | | | # 2 0.32
t 1 ] | | | | ] ] | | | | | | | | | # 3 0.48
t 1 ] | | | | ] ] | ] | | | | | | | # 4 0.64
t 1 ] | | | | ] ] | ] | | | | | | | # 5 0.80
t 1 ] | | | | ] ] | ] | ] | | | | | | # 6 0.96
t 1 ] | | | | ] ] | ] | | | | | | | # 7 1.12
t 1 ] | | | | ] ] | ] | ] | | | | | | # 8 1.28
t 1 ] | | | | ] ] | ] | ] | | | | | | # 9 1.44
t 1 ] | | | | ] ] | ] | ] | | | | | | # 10 1.60
t 1 ] | | | | ] ] | ] | ] | | | | | | # 11 1.76
t 1 ] | | | | ] ] | ] | ] | | | | | | # 12 1.92
t 1 ] | | | | ] | | | | | | | | | | # 13 2.08
t 1 ] | | | | ] | | | | | | | | | | # 14 2.24
t 1 ] | | | | ] | | | | | | | | | | # 15 2.40
t 1 ] | | | | ] | | | | ] | | | | | | # 16 2.56
t 1 ] | | | | ] | | | | ] | | | | | | # 17 2.72
t 1 ] | | | | ] | | | | ] | | | | | | # 18 2.88
t 1 ] | | | | ] | | | | ] | | | | | | # 19 3.04
t 1 ] | | | | ] | | | | ] | | | | | | # 20 3.20

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t 1 ] | | | | ] | | | | | | | | | # 21 3.36
t 1 ] | | | | ] | | | | | | | | | # 22 3.52
t 1 ] | | | | ] | | | | | | | | | # 23 3.68
t 1 ] | | | | ] | | | | | | | | | # 24 3.84
t 1 | | | | | ] | | | | | | | | | # 25 4.00
t 1 | | | | | ] | | | | | | | | | # 26 4.16
t 1 | | | | | ] | | | | | | | | | # 27 4.32
t 1 | | | | | ] | | | | | | | | | # 28 4.48
t 1 | | | | | ] | | | | | | | | | # 29 4.64
t 1 | | | | | ] | | ] | | | | | | | # 30 4.80
t 1 | | | | | ] | | ] | | | | | | | # 31 4.96
t 1 | | | | | ] | | | | | | | | | # 32 5.12
t 1 | | | | | ] | | | | | | | | | # 33 5.28
t 1 | | | | | ] | | | | | | | | | # 34 5.44
t 1 | | | | | ] | | | | | | | | | # 35 5.60
t 1 | | | | | ] | | | | | | | | | # 36 5.76
t 1 | | | | | ] | | | | | | | | | # 37 5.92
t 1 | | | | | ] | | | | | | | | | # 38 6.08
t 1 | | | | | ] | | | | | | | | | # 39 6.24
t 1 | | | | | ] | | | | | | | | | # 40 6.40
t 1 | | | | | ] | | | | | | | | | # 41 6.56
t 1 | | | | | ] | | | | | | | | | # 42 6.72
t 1 | | | | | ] | | | | | | | | | # 43 6.88
t 1 | | | | | ] | | | | | | | | | # 44 7.04
t 1 | | | | | ] | | | | | | | | | # 45 7.20
t 1 | | | | | ] | | | | | | | | | # 46 7.36
t 1 | | | | | ] | | | | | | | | | # 47 7.52
t 1 | | | | | ] | | | | | | | | | # 48 7.68
t 1 | | | | | ] | | | | | | | | | # 49 7.84
t 1 | | | | | ] | | | | | | | | | # 50 8.00
t 1 | | | | | ] | | | | | | | | | # 51 8.16
t 1 | | | | | ] | | | | | | | | | # 52 8.32
t 1 | | | | | ] | | | | | | | | | # 53 8.48
t 1 | | | | | ] | | | | | | | | | # 54 8.64
t 1 | | | | | ] | | | | | | | | | # 55 8.80
t 1 | | | | | ] | | | | | | | | | # 56 8.96
t 1 | | | | | ] | | | | | | | | | # 57 9.12
t 1 | | | | | ] | | | | | | | | | # 54 8.64
t 1 | | | | | ] | | | | | | | | | # 55 8.80
t 1 | | | | | ] | | | | | | | | | # 56 8.96
t 1 | | | | | ] | | | | | | | | | # 57 9.12
t 1 | | | | | ] | | | | | | | | | # 58 9.28
t 2 | | | | | ] | | | | | | | | | # 60 9.60
t 1 | | | | | ] | | | | | | | | | # 61 9.76
end
#
# ----- #
# Clock patterns to read HAWAII slowly #
# ----- #
set_clock_tick          4 # 640 ns/t
operation_type          700 # NOP
#      80 ns/tick
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 | | | | | ] | | | | | | | | | # 1 0.08
end
#
set_clock_tick          4 # 640 ns/t
operation_type          701 # A/D 1st & 2nd Pixel
#      80 ns/tick
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 18 | | | | | ] | | | | | | | | | # 18 2.88
t 6 ] | | | | | ] | | | | | | | | | # 24 3.84
t 12 ] | | | | | ] | | | | | | | | | # 36 5.76
t 6 ] ] | | | | | ] | | | | | | | | | # 42 6.72
t 24 ] ] | | | | | ] | | | | | | | | | # 66 10.56
t 12 ] ] | | | | | ] | | | | | | | | | # 78 12.48
t 25 ] ] ] | | | | | ] | | | | | | | | | # 103 16.48
t 2 ] ] ] | | | | | ] | | | | | | | | | # 105 16.80
t 5 ] ] ] | | | | | ] | | | | | | | | | # 110 17.60

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t 25 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 135 21.60
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 136 21.76
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 137 21.92
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 138 22.08
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 139 22.24
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 140 22.40
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 141 22.56
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 142 22.72
end
#
set_clock_tick 4 # 640 ns/t
operation_type 702 # A/D 2 Pixels in Odd Row
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 1 0.16
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 2 0.32
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 3 0.48
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 4 0.64
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 5 0.80
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 6 0.96
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 7 1.12
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 8 1.28
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 9 1.44
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 10 1.60
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 11 1.76
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 12 1.92
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 13 2.08
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 14 2.24
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 15 2.40
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 16 2.56
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 17 2.72
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 18 2.88
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 19 3.04
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 20 3.20
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 21 3.36
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 22 3.52
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 23 3.68
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 24 3.84
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 25 4.00
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 26 4.16
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 27 4.32
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 28 4.48
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 29 4.64
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 30 4.80
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 31 4.96
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 32 5.12
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 33 5.28
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 34 5.44
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 35 5.60
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 36 5.76
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 37 5.92
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 38 6.08
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 39 6.24
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 40 6.40
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 41 6.56
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 42 6.72
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 43 6.88
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 44 7.04
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 45 7.20
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 46 7.36
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 47 7.52
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 48 7.68
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 49 7.84
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 50 8.00
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 51 8.16
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 52 8.32
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 53 8.48
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 54 8.64
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 55 8.80
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 56 8.96
t 1 ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] # 57 9.12

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t 1 ] ] | ] ] ] ] ] | | | | | | | # 58 9.28
t 1 ] ] | ] ] ] ] ] | | | | | | ] | # 59 9.44
t 1 ] ] | ] ] ] ] ] | ] | | | | | ] | # 60 9.60
t 1 ] ] | ] ] ] ] ] | | | | | | | | # 61 9.76
t 1 ] ] | ] ] ] ] ] | ] | | | | | | | # 62 9.92
t 1 ] ] | ] ] ] ] ] | | | | | | | | # 63 10.08
t 1 ] ] | ] ] ] ] ] | ] | | | | | | | # 64 10.24
end
#
set_clock_tick          4 # 640 ns/t
operation_type          703 # A/D 2 Pixels in Even Row
# 80 ns/tick
# Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 ] ] ] | ] ] ] | | | | | | | | # 1 0.16
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 2 0.32
t 1 ] ] ] | ] ] ] | | | | | | | | # 3 0.48
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 4 0.64
t 1 ] ] ] | ] ] ] | | | | | | | | # 5 0.80
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 6 0.96
t 1 ] ] ] | ] ] ] | | | | | | | | # 7 1.12
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 8 1.28
t 1 ] ] ] | ] ] ] | | | | | | | | # 9 1.44
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 10 1.60
t 1 ] ] ] | ] ] ] | | | | | | | | # 11 1.76
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 12 1.92
t 1 ] ] ] | ] ] ] | | | | | | | | # 13 2.08
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 14 2.24
t 1 ] ] ] | ] ] ] | | | | | | | | # 15 2.40
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 16 2.56
t 1 ] ] ] | ] ] ] | | | | | | | | # 17 2.72
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 18 2.88
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 19 3.04
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 20 3.20
t 1 ] ] ] | ] ] ] | | | | | | | | # 21 3.36
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 22 3.52
t 1 ] ] ] | ] ] ] | | | | | | | | # 23 3.68
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 24 3.84
t 1 ] ] ] | ] ] ] | | | | | | | | # 25 4.00
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 26 4.16
t 1 ] ] ] | ] ] ] | ] | | | | | ] | # 27 4.32
t 1 ] ] ] | ] ] ] | ] | | | | | ] | # 28 4.48
t 1 ] ] ] | ] ] ] | | | | | | | | # 29 4.64
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 30 4.80
t 1 ] ] ] | ] ] ] | | | | | | | | # 31 4.96
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 32 5.12
t 1 ] ] ] | ] ] ] | | | | | | | | # 33 5.28
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 34 5.44
t 1 ] ] ] | ] ] ] | | | | | | | | # 35 5.60
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 36 5.76
t 1 ] ] ] | ] ] ] | | | | | | | | # 37 5.92
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 38 6.08
t 1 ] ] ] | ] ] ] | | | | | | | | # 39 6.24
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 40 6.40
t 1 ] ] ] | ] ] ] | | | | | | | | # 41 6.56
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 42 6.72
t 1 ] ] ] | ] ] ] | | | | | | | | # 43 6.88
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 44 7.04
t 1 ] ] ] | ] ] ] | | | | | | | | # 45 7.20
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 46 7.36
t 1 ] ] ] | ] ] ] | | | | | | | | # 47 7.52
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 48 7.68
t 1 ] ] ] | ] ] ] | | | | | | | | # 49 7.84
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 50 8.00
t 1 ] ] ] | ] ] ] | | | | | | | | # 51 8.16
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 52 8.32
t 1 ] ] ] | ] ] ] | | | | | | | | # 53 8.48
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 54 8.64
t 1 ] ] ] | ] ] ] | | | | | | | | # 55 8.80
t 1 ] ] ] | ] ] ] | ] | | | | | | | # 56 8.96
t 1 ] ] ] | ] ] ] | | | | | | | | # 57 9.12
t 1 ] ] ] | ] ] ] | ] ] ] ] | | | | | | | # 58 9.28

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t 1 ] ] | | ] ] | | | | | | ] | # 59 9.44
t 1 ] ] | | ] ] | ] | | | | | ] | # 60 9.60
t 1 ] ] | | ] ] | | | | | | | | # 61 9.76
t 1 ] ] | | ] ] | ] | | | | | | # 62 9.92
t 1 ] ] | | ] ] | | | | | | | | # 63 10.08
t 1 ] ] | | ] ] | ] | | | | | | # 64 10.24
end
#
set_clock_tick          4 # 640 ns/t
operation_type          704 # Start & Reset Odd Row
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 6 ] | | | ] ] | ] | | | | | | # 6 0.96
t 12 ] | | | ] ] | ] | | | | | | # 18 2.88
t 6 ] ] | | ] ] | ] | | | | | | # 24 3.84
t 24 ] ] | | ] ] | ] | | | | | | # 48 7.68
t 12 ] ] | | ] ] | ] | | | | | | # 60 9.60
end
#
set_clock_tick          4 # 640 ns/t
operation_type          705 # Start & Reset Even Row
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 6 ] | | | ] ] | ] | | | | | | # 6 0.96
t 12 ] | | | ] ] | ] | | | | | | # 18 2.88
t 6 ] ] | | ] ] | ] | | | | | | # 24 3.84
t 24 ] ] | | ] ] | ] | | | | | | # 48 7.68
t 12 ] ] | | ] ] | ] | | | | | | # 60 9.60
end
#
set_clock_tick          4 # 640 ns/t
operation_type          706 # End
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 1 ] | | | ] ] | ] | | | | | | # 1 0.16
t 1 ] | | | ] ] | ] | ] | | | | | | # 2 0.32
t 1 ] | | | ] ] | ] | | | | | | # 3 0.48
t 1 ] | | | ] ] | ] | ] | | | | | | # 4 0.64
t 1 ] | | | ] ] | ] | | | | | | # 5 0.80
t 1 ] | | | ] ] | ] | ] | | | | | | # 6 0.96
t 1 ] | | | ] ] | ] | | | | | | # 7 1.12
t 1 ] | | | ] ] | ] | ] | | | | | | # 8 1.28
t 1 ] | | | ] ] | ] | | | | | | # 9 1.44
t 1 ] | | | ] ] | ] | ] | | | | | | # 10 1.60
t 1 ] | | | ] ] | ] | | | | | | # 11 1.76
t 1 ] | | | ] ] | ] | ] | | | | | | # 12 1.92
t 1 ] | | | ] ] | ] | | | | | | # 13 2.08
t 1 ] | | | ] ] | ] | ] | | | | | | # 14 2.24
t 1 ] | | | ] ] | ] | | | | | | # 15 2.40
t 1 ] | | | ] ] | ] | | | | | | # 16 2.56
t 1 ] | | | ] ] | ] | | | | | | # 17 2.72
t 1 ] | | | ] ] | ] | ] | | | | | | # 18 2.88
t 1 ] | | | ] ] | ] | | | | | | # 19 3.04
t 1 ] | | | ] ] | ] | ] | | | | | | # 20 3.20
t 1 ] | | | ] ] | ] | | | | | | # 21 3.36
t 1 ] | | | ] ] | ] | ] | | | | | | # 22 3.52
t 1 ] | | | ] ] | ] | | | | | | # 23 3.68
t 1 ] | | | ] ] | ] | ] | | | | | | # 24 3.84
t 1 ] | | | ] ] | ] | | | | | | # 25 4.00
t 1 ] | | | ] ] | ] | ] | | | | | | # 26 4.16
t 1 ] | | | ] ] | ] | ] | | | | ] | # 27 4.32
t 1 ] | | | ] ] | ] | ] | | | ] | # 28 4.48
t 1 ] | | | ] ] | ] | | | | | | # 29 4.64
t 1 ] | | | ] ] | ] | | ] | | | | # 30 4.80
t 1 ] | | | ] ] | ] | | ] | | | | # 31 4.96
t 1 ] | | | ] ] | ] | | ] | | | | # 32 5.12
t 1 ] | | | ] ] | ] | | ] | | | | # 33 5.28

```

```

t 1 | | | | ] | | | ] | | | | | | | # 34 5.44
t 1 | | | | ] | | | | | | | | | | | # 35 5.60
t 1 | | | | ] | | | | ] | | | | | | | # 36 5.76
t 1 | | | | ] | | | | | | | | | | | # 37 5.92
t 1 | | | | ] | | | | ] | | | | | | | # 38 6.08
t 1 | | | | ] | | | | | | | | | | | # 39 6.24
t 1 | | | | ] | | | | ] | | | | | | | # 40 6.40
t 1 | | | | ] | | | | | | | | | | | # 41 6.56
t 1 | | | | ] | | | | ] | | | | | | | # 42 6.72
t 1 | | | | ] | | | | | | | | | | | # 43 6.88
t 1 | | | | ] | | | | ] | | | | | | | # 44 7.04
t 1 | | | | ] | | | | | | | | | | | # 45 7.20
t 1 | | | | ] | | | | ] | | | | | | | # 46 7.36
t 1 | | | | ] | | | | | | | | | | | # 47 7.52
t 1 | | | | ] | | | | ] | | | | | | | # 48 7.68
t 1 | | | | ] | | | | | | | | | | | # 49 7.84
t 1 | | | | ] | | | | ] | | | | | | | # 50 8.00
t 1 | | | | ] | | | | | | | | | | | # 51 8.16
t 1 | | | | ] | | | | ] | | | | | | | # 52 8.32
t 1 | | | | ] | | | | | | | | | | | # 53 8.48
t 1 | | | | ] | | | | ] | | | | | | | # 54 8.64
t 1 | | | | ] | | | | | | | | | | | # 55 8.80
t 1 | | | | ] | | | | ] | | | | | | | # 56 8.96
t 1 | | | | ] | | | | | | | | | | | # 57 9.12
t 1 | | | | ] | | | | ] | | | | | | | # 58 9.28
t 2 | | | | ] | | | | ] | | | | | ] | | # 60 9.60
t 1 | | | | ] | | | | ] | | | | | | | # 61 9.76
end
#
set_clock_tick          4 # 640 ns/t
operation_type          707 # Start of 2nd Frame
#      80 ns/tick
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 18 | | | | ] | | | ] | | | | | | | # 18 2.88
t 6 ] | | | | ] | | | ] | | | | | | | # 24 3.84
t 12 ] | | | | ] | | | ] | | | | | | | # 36 5.76
t 6 ] ] | | | ] | | | ] | | | | | | | # 42 6.72
t 24 ] ] | | | ] | | | ] | | | | | | | # 66 10.56
t 12 ] ] | | | ] | | | ] | | | | | | | # 78 12.48
t 25 ] ] | ] | ] | | | ] | | | | | | | # 103 16.48
t 2 ] ] | ] | ] | | | ] | | | | | | | # 105 16.80
t 5 ] ] | ] | ] | | | ] | | | | | | | # 110 17.60
t 25 ] ] | | | ] | | | ] | | | | | | | # 135 21.60
t 1 ] ] | | | ] | | | ] | | | | | | | # 136 21.76
t 1 ] ] | | | ] | | | ] | | | | | | | # 137 21.92
t 1 ] ] | | | ] | | | ] | | | | | | | # 138 22.08
t 1 ] ] | | | ] | | | ] | | | | | | | # 139 22.24
t 1 ] ] | | | ] | | | ] | | | | | | | # 140 22.40
t 1 ] ] | | | ] | | | ] | | | | | | | # 141 22.56
t 1 ] ] | | | ] | | | ] | | | | | | | # 142 22.72
end
#
set_clock_tick          4 # 640 ns/t
operation_type          708 # Start of Odd Row
#      80 ns/tick
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 6 ] | | | | ] | | | ] | | | | | | | # 6 0.96
t 12 ] | | | | ] | | | ] | | | | | | | # 18 2.88
t 6 ] ] | | | ] | | | ] | | | | | | | # 24 3.84
t 24 ] ] | | | ] | | | ] | | | | | | | # 48 7.68
t 12 ] ] | | | ] | | | ] | | | | | | | # 60 9.60
end
#
set_clock_tick          4 # 640 ns/t
operation_type          709 # Start of Even Row
#      80 ns/tick
#      Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
#      Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st      Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31

```

```

t 6 ] | | ] ] ] | ] | | | | | | # 6 0.96
t 12 ] | | | ] ] | ] | | | | | | # 18 2.88
t 6 ] ] | | ] ] | ] | | | | | | # 24 3.84
t 24 ] ] | | ] ] | ] | | | | | | # 48 7.68
t 12 ] ] | | ] ] | ] | | | | | | # 60 9.60
end
#
set_clock_tick 4 # 640 ns/t
operation_type 710 # Reset Frame (Odd Row)
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 32 ] | | ] | | | ] | | | | | | # 32 5.12
end
#
set_clock_tick 4 # 640 ns/t
operation_type 711 # Reset Frame (Even Row)
# 80 ns/tick
# Syn Syn Clk Clk Re Re AD P/S HKP HKP HKP HKP Lo Te
# Fr Lin Pix Lin set ad Trg Clk Trg P/S SW Rst ad st Σ t μ s
start 0 1 2 3 4 5 6 7 8 9 10 11 14 31
t 32 ] | | | | | | | ] | | | | | ] # 32 5.12
end
#
#

```

C.2 spv.ascii

```
#-----#
#   Clock routines to read HAWAII   #
#-----#
begin stop_clk          # Initial(inactive) state
  ccd_operation 960 200
end

begin reset_frame       # Reset all pixels quickly
  ccd_operation 0 211    # "Sync Frame" up, "Reset" down
  loop1_start 256
    ccd_operation 0 210  # Reset all pixels in odd row
    ccd_operation 0 211  # Reset all pixels in even row
  loop1_continue
  ccd_operation 5120 200 # End
end

begin reset_scan
  ccd_operation 0 201    # Start of frame & 2 pixels
  loop1_start 255       # 1st row
    ccd_operation 0 202  # Read 2 pixels in odd row
  loop1_continue

  ccd_operation 0 205    # Start & reset 2nd row
  ccd_operation 0 203    # 1st & 2nd pixel
  loop1_start 255       # 510 more pixels
    ccd_operation 0 203  # Read 2 pixels in even row
  loop1_continue

  loop2_start 255       # 510 more rows
    ccd_operation 0 204  # Start & reset odd row
    ccd_operation 0 202  # 1st & 2nd pixel
    loop1_start 255     # 512 pixels
      ccd_operation 0 202 # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 205  # Start & reset even row
    ccd_operation 0 203  # 1st & 2nd pixel
    loop1_start 255     # 510 more pixels
      ccd_operation 0 203 # Read 2 pixels in even row
    loop1_continue
  loop2_continue

  ccd_operation 0 206    # End of frame
end

begin scan
  ccd_operation 0 207    # Start of frame & 2 pixels
  loop1_start 255       # 1st row
    ccd_operation 0 202  # Read 2 pixels in odd row
  loop1_continue

  ccd_operation 0 209    # Start of 2nd row
  ccd_operation 0 203    # 1st & 2nd pixel
  loop1_start 255       # 510 more pixels
    ccd_operation 0 203  # Read 2 pixels in even row
  loop1_continue

  loop2_start 255       # 510 more rows
    ccd_operation 0 208  # Start of odd row
    ccd_operation 0 202  # 1st & 2nd pixel
    loop1_start 255     # 512 pixels
      ccd_operation 0 202 # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 209  # Start of even row
    ccd_operation 0 203  # 1st & 2nd pixel
    loop1_start 255     # 510 more pixels
      ccd_operation 0 203 # Read 2 pixels in even row
    loop1_continue
  loop2_continue
```

```

        ccd_operation 0 206          # End of frame
end

begin non_stop
    loop3_start -1
        ccd_operation 0 201          # Start of frame & 2 pixels
        loop1_start 255              # 1st row
        ccd_operation 0 202          # Read 2 pixels in odd row
        loop1_continue

        ccd_operation 0 205          # Start & reset 2nd row
        ccd_operation 0 203          # 1st & 2nd pixel
        loop1_start 255              # 510 more pixels
        ccd_operation 0 203          # Read 2 pixels in even row
        loop1_continue

        loop2_start 255              # 510 more rows
        ccd_operation 0 204          # Start & reset odd row
        ccd_operation 0 202          # 1st & 2nd pixel
        loop1_start 255              # 512 pixels
        ccd_operation 0 202          # Read 2 pixels in odd row
        loop1_continue

        ccd_operation 0 205          # Start & reset even row
        ccd_operation 0 203          # 1st & 2nd pixel
        loop1_start 255              # 510 more pixels
        ccd_operation 0 203          # Read 2 pixels in even row
        loop1_continue
        loop2_continue

        ccd_operation 0 206          # End of frame
    loop3_continue
end
#
#-----#
# Clock routines to read HAWAII without loading data to VMI      #
#-----#
#
begin _reset_scan
    ccd_operation 0 201          # Start of frame & 2 pixels
    loop1_start 255              # 1st row
    ccd_operation 0 402          # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 205          # Start & reset 2nd row
    ccd_operation 0 403          # 1st & 2nd pixel
    loop1_start 255              # 510 more pixels
    ccd_operation 0 403          # Read 2 pixels in even row
    loop1_continue

    loop2_start 255              # 510 more rows
    ccd_operation 0 204          # Start & reset odd row
    ccd_operation 0 402          # 1st & 2nd pixel
    loop1_start 255              # 512 pixels
    ccd_operation 0 402          # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 205          # Start & reset even row
    ccd_operation 0 403          # 1st & 2nd pixel
    loop1_start 255              # 510 more pixels
    ccd_operation 0 403          # Read 2 pixels in even row
    loop1_continue
    loop2_continue

    ccd_operation 0 406          # End of frame
end

begin _scan
    ccd_operation 0 207          # Start of frame & 2 pixels
    loop1_start 255              # 1st row
    ccd_operation 0 402          # Read 2 pixels in odd row
    loop1_continue

```

```

    ccd_operation 0 209      # Start of 2nd row
    ccd_operation 0 403      # 1st & 2nd pixel
    loop1_start 255          # 510 more pixels
    ccd_operation 0 403      # Read 2 pixels in even row
    loop1_continue

    loop2_start 255          # 510 more rows
    ccd_operation 0 208      # Start of odd row
    ccd_operation 0 402      # 1st & 2nd pixel
    loop1_start 255          # 512 pixels
    ccd_operation 0 402      # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 209      # Start of even row
    ccd_operation 0 403      # 1st & 2nd pixel
    loop1_start 255          # 510 more pixels
    ccd_operation 0 403      # Read 2 pixels in even row
    loop1_continue
    loop2_continue

    ccd_operation 0 406      # End of frame
end
#
# 0.1sec wait clock
# K.Motohara (1999/4/24)
#
begin wait0100
    ccd_operation 0 301
    loop1_start 100
    wait 1000
    loop1_continue
    ccd_operation 0 301
end
#
#-----#
#      Clock routines to read 64x64      #
#-----#
#
begin 64reset_scan
    ccd_operation 0 201      # Start of frame & 2 pixels
    loop1_start 31           # 1st row
    ccd_operation 0 202      # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 205      # Start & reset 2nd row
    ccd_operation 0 203      # 1st & 2nd pixel
    loop1_start 31           # 62 more pixels
    ccd_operation 0 203      # Read 2 pixels in even row
    loop1_continue

    loop2_start 31           # 62 more rows
    ccd_operation 0 204      # Start & reset odd row
    ccd_operation 0 202      # 1st & 2nd pixel
    loop1_start 31           # 62 pixels
    ccd_operation 0 202      # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 205      # Start & reset even row
    ccd_operation 0 203      # 1st & 2nd pixel
    loop1_start 31           # 62 more pixels
    ccd_operation 0 203      # Read 2 pixels in even row
    loop1_continue
    loop2_continue

    ccd_operation 0 206      # End of frame
end

begin 64scan
    ccd_operation 0 207      # Start of frame & 2 pixels
    loop1_start 31           # 1st row
    ccd_operation 0 202      # Read 2 pixels in odd row
    loop1_continue

```

```

    ccd_operation 0 209      # Start of 2nd row
    ccd_operation 0 203      # 1st & 2nd pixel
    loop1_start 31          # 62 more pixels
    ccd_operation 0 203      # Read 2 pixels in even row
    loop1_continue

    loop2_start 31          # 62 more rows
    ccd_operation 0 208      # Start of odd row
    ccd_operation 0 202      # 1st & 2nd pixel
    loop1_start 31          # 62 pixels
    ccd_operation 0 202      # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 209      # Start of even row
    ccd_operation 0 203      # 1st & 2nd pixel
    loop1_start 31          # 62 more pixels
    ccd_operation 0 203      # Read 2 pixels in even row
    loop1_continue
    loop2_continue

    ccd_operation 0 206      # End of frame
end
#
#-----#
#   Clock routines to read 128x128   #
#-----#
#
begin 128reset_scan
    ccd_operation 0 201      # Start of frame & 2 pixels
    loop1_start 63          # 1st row
    ccd_operation 0 202      # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 205      # Start & reset 2nd row
    ccd_operation 0 203      # 1st & 2nd pixel
    loop1_start 63          # 126 more pixels
    ccd_operation 0 203      # Read 2 pixels in even row
    loop1_continue

    loop2_start 63          # 62 more rows
    ccd_operation 0 204      # Start & reset odd row
    ccd_operation 0 202      # 1st & 2nd pixel
    loop1_start 63          # 62 pixels
    ccd_operation 0 202      # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 205      # Start & reset even row
    ccd_operation 0 203      # 1st & 2nd pixel
    loop1_start 63          # 62 more pixels
    ccd_operation 0 203      # Read 2 pixels in even row
    loop1_continue
    loop2_continue

    ccd_operation 0 206      # End of frame
end

begin 128scan
    ccd_operation 0 207      # Start of frame & 2 pixels
    loop1_start 63          # 1st row
    ccd_operation 0 202      # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 209      # Start of 2nd row
    ccd_operation 0 203      # 1st & 2nd pixel
    loop1_start 63          # 126 more pixels
    ccd_operation 0 203      # Read 2 pixels in even row
    loop1_continue

    loop2_start 63          # 126 more rows
    ccd_operation 0 208      # Start of odd row
    ccd_operation 0 202      # 1st & 2nd pixel
    loop1_start 63          # 126 pixels
    ccd_operation 0 202      # Read 2 pixels in odd row

```

```

        loop1_continue

        ccd_operation 0 209      # Start of even row
        ccd_operation 0 203      # 1st & 2nd pixel
        loop1_start 63           # 126 more pixels
        ccd_operation 0 203      # Read 2 pixels in even row
        loop1_continue
    loop2_continue

    ccd_operation 0 206          # End of frame
end
#
#-----#
# Clock routines to read HAWAII 4 times slowly #
#-----#
#
begin slow_reset_scan
    ccd_operation 0 701          # Start of frame & 2 pixels
    loop1_start 255              # 1st row
    ccd_operation 0 702          # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 705          # Start & reset 2nd row
    ccd_operation 0 703          # 1st & 2nd pixel
    loop1_start 255              # 510 more pixels
    ccd_operation 0 703          # Read 2 pixels in even row
    loop1_continue

    loop2_start 255              # 510 more rows
    ccd_operation 0 704          # Start & reset odd row
    ccd_operation 0 702          # 1st & 2nd pixel
    loop1_start 255              # 512 pixels
    ccd_operation 0 702          # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 705          # Start & reset even row
    ccd_operation 0 703          # 1st & 2nd pixel
    loop1_start 255              # 510 more pixels
    ccd_operation 0 703          # Read 2 pixels in even row
    loop1_continue
    loop2_continue

    ccd_operation 0 706          # End of frame
end

begin slow_scan
    ccd_operation 0 707          # Start of frame & 2 pixels
    loop1_start 255              # 1st row
    ccd_operation 0 702          # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 709          # Start of 2nd row
    ccd_operation 0 703          # 1st & 2nd pixel
    loop1_start 255              # 510 more pixels
    ccd_operation 0 703          # Read 2 pixels in even row
    loop1_continue

    loop2_start 255              # 510 more rows
    ccd_operation 0 708          # Start of odd row
    ccd_operation 0 702          # 1st & 2nd pixel
    loop1_start 255              # 512 pixels
    ccd_operation 0 702          # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 709          # Start of even row
    ccd_operation 0 703          # 1st & 2nd pixel
    loop1_start 255              # 510 more pixels
    ccd_operation 0 703          # Read 2 pixels in even row
    loop1_continue
    loop2_continue

    ccd_operation 0 706          # End of frame
end

```

```

begin slow_non_stop
  loop3_start -1
    ccd_operation 0 701      # Start of frame & 2 pixels
    loop1_start 255         # 1st row
    ccd_operation 0 702      # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 705      # Start & reset 2nd row
    ccd_operation 0 703      # 1st & 2nd pixel
    loop1_start 255         # 510 more pixels
    ccd_operation 0 703      # Read 2 pixels in even row
    loop1_continue

    loop2_start 255         # 510 more rows
    ccd_operation 0 704      # Start & reset odd row
    ccd_operation 0 702      # 1st & 2nd pixel
    loop1_start 255         # 512 pixels
    ccd_operation 0 702      # Read 2 pixels in odd row
    loop1_continue

    ccd_operation 0 705      # Start & reset even row
    ccd_operation 0 703      # 1st & 2nd pixel
    loop1_start 255         # 510 more pixels
    ccd_operation 0 703      # Read 2 pixels in even row
    loop1_continue
    loop2_continue

    ccd_operation 0 706      # End of frame
  loop3_continue
end
#
#-----#
# Clock routines to reset pixels during reading HAWAII #
#-----#
#
begin allreset_scan
  ccd_operation 0 271      # Start of frame & 2 pixels
  loop1_start 255         # 1st row
  ccd_operation 0 272      # Read 2 pixels in odd row
  loop1_continue

  ccd_operation 0 275      # Start & reset 2nd row
  ccd_operation 0 273      # 1st & 2nd pixel
  loop1_start 255         # 510 more pixels
  ccd_operation 0 273      # Read 2 pixels in even row
  loop1_continue

  loop2_start 255         # 510 more rows
  ccd_operation 0 274      # Start & reset odd row
  ccd_operation 0 272      # 1st & 2nd pixel
  loop1_start 255         # 512 pixels
  ccd_operation 0 272      # Read 2 pixels in odd row
  loop1_continue

  ccd_operation 0 275      # Start & reset even row
  ccd_operation 0 273      # 1st & 2nd pixel
  loop1_start 255         # 510 more pixels
  ccd_operation 0 273      # Read 2 pixels in even row
  loop1_continue
  loop2_continue

  ccd_operation 0 276      # End of frame
end
#
#-----#
#          Clock routines to read HKP          #
#-----#
#
begin read_hkp
  ccd_operation 0 100
  loop1_start 31
  ccd_operation 0 101

```

```
    loop1_continue
    ccd_operation 0 102
end
#
begin read_hkp_nstp
    ccd_operation 0 100
    loop1_start -1
        ccd_operation 0 101
    loop1_continue
end
#
```

C.3 idsp_com.c (IDSP制御プログラム)

```
#include "../dspgen/idsp.h"
#include "../dspgen/dsp.h"
#include "../dspgen/idsp_sub.h"
#include "idsp_cp.h"

#define CLK_OK 1

struct adc_dac
{
    float offset[8],linear[8];
};

extern struct adc_dac adc_para;

void Msa_CIC_DSP_IdspOperation_forever_reset()
{
    long rtc0, expos;
    expos=10000;

    while(1){
        rtc0=Msa_CIC_DSP_RtcCnt_RD_long();

        Msa_CIC_DSP_CdspOperation__reset_scan();
        Msa_CIC_DSP_Nop(10);
        while(Msa_CIC_DSP_CheckBusy());

        while(Msa_CIC_DSP_RtcCnt_RD_long()<=(rtc0+expos));
        Msa_CIC_DSP_Nop(10);
        while(Msa_CIC_DSP_CheckBusy());
    }
}

void take_hawaii(long expos)
{
    long rtc0, rtc1;

    /*-- Control Exposure Time --*/
    rtc0=Msa_CIC_DSP_RtcCnt_RD_long();
    while( (rtc1=Msa_CIC_DSP_RtcCnt_RD_long()) == rtc0 );

    /*-- Send reset_scan --*/
    if(expos >= 10000){
        Msa_CIC_DSP_CdspOperation__reset_scan();
        Msa_CIC_DSP_Nop(10);
        while(Msa_CIC_DSP_CheckBusy());
        Msa_CIC_DSP_CdspOperation_scan();
        Msa_CIC_DSP_Nop(10);
        while(Msa_CIC_DSP_CheckBusy());
    }
    else{
        Msa_CIC_DSP_CdspOperation_reset_scan();
        Msa_CIC_DSP_Nop(10);
        while(Msa_CIC_DSP_CheckBusy());
    }

    /*-- Wait for an exposure --*/
    while(Msa_CIC_DSP_RtcCnt_RD_long()<=rtc0+expos);

    /*-- Send scan --*/
    if(expos >= 10000){
        Msa_CIC_DSP_CdspOperation__scan();
        Msa_CIC_DSP_Nop(10);
        while(Msa_CIC_DSP_CheckBusy());
        Msa_CIC_DSP_CdspOperation_scan();
        Msa_CIC_DSP_Nop(10);
        while(Msa_CIC_DSP_CheckBusy());
    }
    else{
        Msa_CIC_DSP_CdspOperation_scan();
        Msa_CIC_DSP_Nop(10);
        while(Msa_CIC_DSP_CheckBusy());
    }
}
```

```

    }
}

void Msa_CIC_DSP_IdspOperation_idsp_integration(void)
{
    long expos;

    expos=Msa_CIC_DSP_DspHostReceive_long();
    take_hawaii(expos);
}

void Msa_CIC_DSP_IdspOperation_idsp_integration_multi(void)
{
    long expos;
    u_int nsample;
    int i;
    long rtc0, rtc1;

    nsample=Msa_CIC_DSP_DspHostReceive();
    expos=Msa_CIC_DSP_DspHostReceive_long();

    /*-- Control Exposure Time --*/
    rtc0=Msa_CIC_DSP_RtcCnt_RD_long();
    while( (rtc1=Msa_CIC_DSP_RtcCnt_RD_long()) == rtc0 );

    /*-- Send reset_scan --*/
    Msa_CIC_DSP_CdspOperation__reset_scan();
    while(Msa_CIC_DSP_CheckBusy());
    for(i=0;i<nsample;i++){
        Msa_CIC_DSP_CdspOperation_scan();
        Msa_CIC_DSP_Nop(10);
        while(Msa_CIC_DSP_CheckBusy());
    }
    /*-- Tell messiah that the start frame clock has ended. --*/
    Msa_CIC_DSP_Nop(10);
    Msa_CIC_DSP_iDspHostSend(nsample);
    /* Msa_CIC_DSP_DspHostSend(nsample); */
    Msa_CIC_DSP_Nop(10);

    /*-- Wait for memory allocation on VMI board --*/
    nsample=Msa_CIC_DSP_DspHostReceive();
    Msa_CIC_DSP_Nop(10);

    /*-- Wait for an exposure --*/
    while(Msa_CIC_DSP_RtcCnt_RD_long()<=rtc1+expos);

    /*-- Send scan --*/
    Msa_CIC_DSP_CdspOperation__scan();
    while(Msa_CIC_DSP_CheckBusy());
    for(i=0;i<nsample;i++){
        Msa_CIC_DSP_CdspOperation_scan();
        Msa_CIC_DSP_Nop(10);
        while(Msa_CIC_DSP_CheckBusy());
    }
}

void take_hawaii64(long expos)
{
    long rtc0, rtc1;
    /*-- Control Exposure Time --*/
    rtc0=Msa_CIC_DSP_RtcCnt_RD_long();
    while( (rtc1=Msa_CIC_DSP_RtcCnt_RD_long()) == rtc0 );
    /*-- Send 64reset_scan --*/
    Msa_CIC_DSP_CdspOperation_64reset_scan();
    Msa_CIC_DSP_Nop(10);
    while(Msa_CIC_DSP_CheckBusy());

    /*-- Wait for an exposure --*/
    while(Msa_CIC_DSP_RtcCnt_RD_long()<=rtc1+expos);

    /*-- Send scan --*/
    Msa_CIC_DSP_CdspOperation_64scan();
}

```

```

    Msa_CIC_DSP_Nop(10);
    while(Msa_CIC_DSP_CheckBusy());
}

void Msa_CIC_DSP_IdspOperation_block_scan64(void)
{
    u_int i ;
    long expos;

    expos=Msa_CIC_DSP_DspHostReceive_long();
    for(i=0;i<64;i++){
        take_hawaii64(expos);
    }
}

void take_hawaii128(long expos)
{
    long rtc0, rtc1;
    /*-- Control Exposure Time --*/
    rtc0=Msa_CIC_DSP_RtcCnt_RD_long();
    while( (rtc1=Msa_CIC_DSP_RtcCnt_RD_long()) == rtc0 );
    /*-- Send 64reset_scan --*/
    Msa_CIC_DSP_CdspOperation_128reset_scan();
    Msa_CIC_DSP_Nop(10);
    while(Msa_CIC_DSP_CheckBusy());

    /*-- Wait for an exposure --*/
    while(Msa_CIC_DSP_RtcCnt_RD_long()<=rtc1+expos);

    /*-- Send scan --*/
    Msa_CIC_DSP_CdspOperation_128scan();
    Msa_CIC_DSP_Nop(10);
    while(Msa_CIC_DSP_CheckBusy());
}

void Msa_CIC_DSP_IdspOperation_block_scan128(void)
{
    u_int i ;
    long expos;

    expos=Msa_CIC_DSP_DspHostReceive_long();
    for(i=0;i<16;i++){
        take_hawaii128(expos);
    }
}

void Msa_CIC_DSP_IdspOperation_check_rtc(void)
{
    long expos,dexpos;
    int i;
    long rtc0, rtc1, rtc2;

    expos=Msa_CIC_DSP_DspHostReceive_long();
    dexpos=expos/10;

    rtc0=Msa_CIC_DSP_RtcCnt_RD_long();
    while( (rtc1=Msa_CIC_DSP_RtcCnt_RD_long()) == rtc0 );

    /*-- Wait expos -- */
    for(i=1;i<=dexpos;i++){
        Msa_CIC_DSP_CdspOperation_wait0100();
        Msa_CIC_DSP_Nop(10);
    }
    /*-- Wait for an exposure --*/
    rtc2=Msa_CIC_DSP_RtcCnt_RD_long();

    Msa_CIC_DSP_Nop(10);
    Msa_CIC_DSP_iDspHostSend_long(rtc0);
    Msa_CIC_DSP_Nop(10);
    Msa_CIC_DSP_iDspHostSend_long(rtc2);
    Msa_CIC_DSP_Nop(10);
    Msa_CIC_DSP_iDspHostSend_long(rtc0+expos);
}

```

```

int Msa_Sys_CIC_DSP_IdspCom(u_int com)
{
    if(com==150)
    {Msa_CIC_DSP_IdspOperation_forever_reset();}
    if(com==151)
    {Msa_CIC_DSP_IdspOperation_idsp_integration();}
    if(com==152)
    {Msa_CIC_DSP_IdspOperation_idsp_integration_multi();}
    if(com==153)
    {Msa_CIC_DSP_IdspOperation_block_scan64();}
    if(com==154)
    {Msa_CIC_DSP_IdspOperation_block_scan128();}
    if(com==155)
    {Msa_CIC_DSP_IdspOperation_check_rtc();}
    return DSP_OK;
}

```

付 録 D CISCO 抽象化コマンドマニ アル

このコマンドマニュアルは 1999 年 11 月 22 日現在ものです。

D.1 コマンド一覧

CISCO の抽象化コマンドは大きく分けて撮像用と分光用の二つに分けられます。さらにそれぞれについて、ディザリング (ノッディング) パターンによって複数の観測モードがあり、それぞれにコマンドが用意されています。

現在存在する観測モードとそれに入っている抽象化コマンドは以下のようになっています。

CISCO 様々な観測に共通に用いられるコマンド

AGOFFSET
BOOTQDAS
BOOTQDASVGW
BOOTTELESCOPE
CALIBIMAGE
CHECKFIELD
CHECKFOCUS
DOSH
FOCUSOBE
GETDARK
PROBEOFFSET
SETUPCALIB
SETUPOBE
SETUPSPEC
SHOWIMAGE
SHUTDOWNBE
SHUTDOWNQDAS
SHUTDOWNQDASVGW
SHUTDOWNTELESCOPE
TELOFFSET
TELOFFSET_AG
TELOFFSETBYVGW

CS_IMAGING 撮像共通のコマンドと、1点のみの撮像用のコマンド

CHANGEAGPAR
GETOBJECT
GETOBJECT_AG
GETOBJECT_VGW
GETSTANDARD
SETUPFIELD
SETUPFIELD_AG
SETUPFIELD_VGW

CS_IMAGING4 4点ディザリングの撮像用コマンド

GETOBJECT
GETOBJECT_AG
GETOBJECT_VGW
GETSTANDARD

CS_IMAGING8 8点ディザリングの撮像用コマンド

GETOBJECT
GETOBJECT_AG
GETOBJECT_VGW
GETSTANDARD

CS_IMAGING4SKY4 スカイを回りの4点で取得する撮像用コマンド

GETOBJECT_VGW

CS_BL64 64×64ピクセル部分読み出し撮像用のコマンド

GETOBJECT
GETSTANDARD

CS_BL128 128×128ピクセル部分読み出し撮像用のコマンド

GETOBJECT
GETSTANDARD

CS_SPECTROSCOPY 分光共通のコマンドと、1点のみの分光用コマンド

GETOBJECT
GETSTANDARD
SETUPFIELD
SETUPFIELD_AG
SETUPFIELD_VGW

CS_SPECTROSCOPY2 2点ノッディングの分光用コマンド

GETOBJECT
GETSTANDARD

CS_SPECTROSCOPY4 4点ノッディングの分光用コマンド

GETOBJECT
GETSTANDARD

CS_SNG スリットスキャン用コマンド

GETOBJECT

D.2 抽象化コマンドリファレンス

AGOFFSET

観測モード:

CISCO

パラメータ:

Parameter	Default Value
	CISCO
DX	0.0
DY	0.0
PA	(-90.0-!TSCL.INSROTPA)

説明 : 望遠鏡を CISCO のフレームを見て **DX**pixels, **DY**pixels 振ります。振る精度はガイダー CCD のピクセル精度になります。

この時の CISCO のピクセルスケールは 0.116"/pix に設定されています。

更新日 : 1999/6/8

作者 : 岩室史英

BOOTQDAS

観測モード:

CISCO

パラメータ: ありません。

説明: QDAS のセットアップを行います。簡易処理を用いるときは、その前に必ず実行してください。

更新日: 1999/3/3

作者: 小杉城治

BOOTQDASVGW

観測モード:

CISCO

パラメータ: ありません。

説明: 調査中

更新日: 1999/3/3

作者: 小杉城治

CHECKFIELD

観測モード:

CISCO

パラメータ:

Parameter	Default Value
	CISCO
DATASET_ID	"DS0000"
OBJECT	"FIELDCHECK"
EXPTIME	NOP
FILTER	NOP
SLITX	NOP
SLITY	NOP
NSAMPLE	NOP
NFRAME	1
FRAMEID	&GET_F_NO[OHS A]

説明： 積分時間 **EXPTIME**、フィルター **FILTER**、スリット幅 $x = \text{SLITX}$, $y = \text{SLITY}$ 、サンプリング回数 **NSAMPLE** でイメージを 1 枚取得します。取得されたデータは QDAS のビューワーに表示されます。

更新日：1999/3/15

作者：小杉城治、岩室史英、本原顕太郎

FOCUSOBE

観測モード:

CISCO

パラメータ:

Parameter	Default Value
	CISCO
DATASET_ID	DS0000
Z	0.1
DELTAZ	0.1
OBJECT	"FOCUSING"
RA	!STATS.RA
DEC	!STATS.DEC
EQNX	2000.0
INSROT	-90.0
EXPTIME	NOP
FILTER	NOP
SLITX	NOP
SLITY	NOP
NSAMPLE	NOP
FRAMEID1	&GET_F_NO[OHS A]
FRAMEID2	&GET_F_NO[OHS A]
FRAMEID3	&GET_F_NO[OHS A]
FRAMEID4	&GET_F_NO[OHS A]
FRAMEID5	&GET_F_NO[OHS A]
FRAMEID6	&GET_F_NO[OHS A]
FRAMEID7	&GET_F_NO[OHS A]
FRAMEID8	&GET_F_NO[OHS A]
FRAMEID9	&GET_F_NO[OHS A]
FRAMEID10	&GET_F_NO[OHS A]
FRAMEID11	&GET_F_NO[OHS A]
FRAMEID12	&GET_F_NO[OHS A]
FRAMEID13	&GET_F_NO[OHS A]
FRAMEID14	&GET_F_NO[OHS A]
FRAMEID15	&GET_F_NO[OHS A]

説明： フォーカスを合わせるコマンドです。

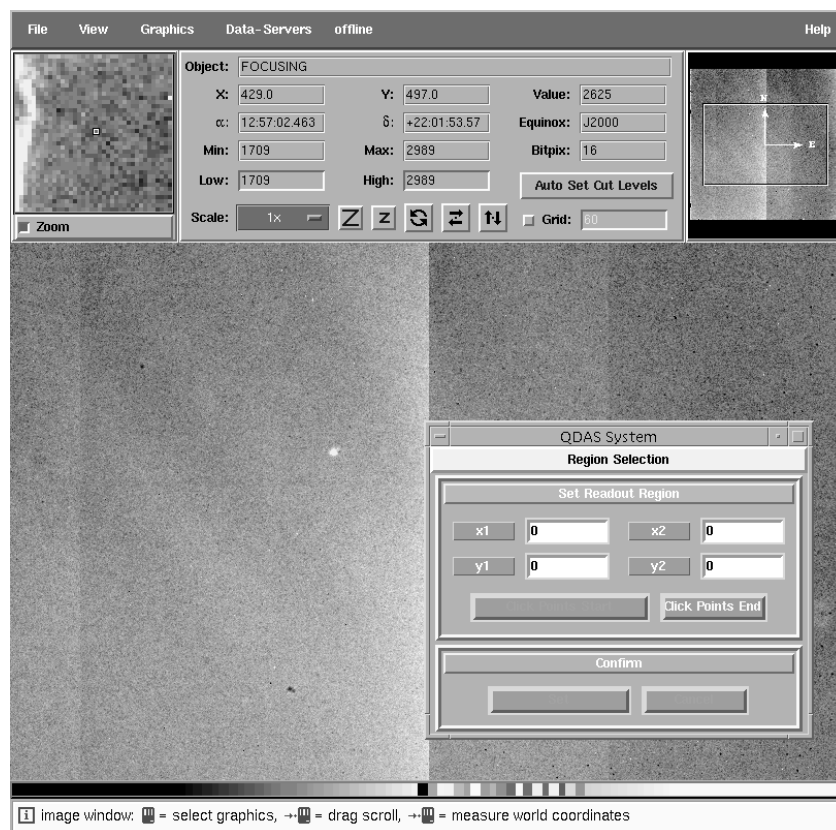
まずは副鏡位置を $(Z+2\times\text{DELTAZ})\sim(Z-2\times\text{DELTAZ})$ まで **DELTAZ** 間隔で動かしながら各位置で 3 枚ずつフレームを取得します。

次に QDAS で FWHM を測定して FWHM-Z 関係を双曲線でフィットしてフォーカスを決定し、副鏡をその位置にセットします。

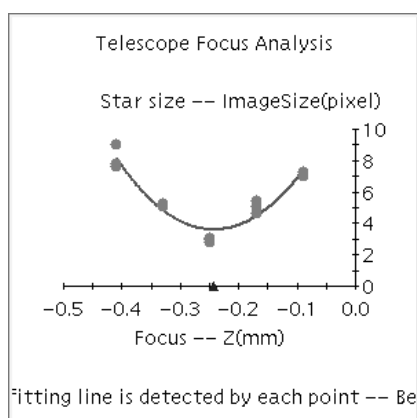
このコマンドの完了応答は CISCO のデータを取得し終わった時点ででてしまうので注意してください。

QDAS で処理を行う関係上 **FRAMEID1**~**FRAMEID15** は変更しないでください。また、このコマンドを発行する前に必ず **BOOTQDAS** を実行しておいてください。

使い方： データの取得が終了したら OWS の "OHS_Online" という名前の skycat にイメージが 1 枚表示されます (下図)。さらに "QDAS System" ウィンドウが現れるので、そこで "Click Points Start" を押して skycat 上の星を矩形領域で囲みます。囲み終わったら "Click Point End" をおして、さらに "SET" を押してください。



しばらくすると下のように”QDAS plot”ウィンドウにフィットのグラフと副鏡位置が表示されます。



これで完了です。

更新日：1999/3/15

作者：小杉城治

GETDARK

観測モード:

CISCO

パラメータ:

Parameter	Default Value
	CISCO
DATASET_ID	DS0000
OBJECT	"DARK"
EXPTIME	NOP
NSAMPLE	NOP
NFRAME	1
FRAMEID	&GET_F_NO[OHS A 1]

説明 : ダークフレームを取得します。

積分時間を **EXPTIME**、取得フレーム数を **NFRAME** で指定します。

NFRAME と **FRAMEID** の枚数を同じにするように注意してください。

更新日 : 1999/3/15

作者 : 小杉城治、本原顕太郎

GETOBJECT

観測モード:

CS_IMAGING
CS_IMAGING4
CS_IMAGING8
CS_BL64
CS_BL128
CS_SPECTROSCOPY
CS_SPECTROSCOPY2
CS_SPECTROSCOPY4

パラメータ:

Parameter	Default Value			
	CS_IMAGING	CS_IMAGING4	CS_IMAGING8	CS_BL64,CS_BL128
DATASET_ID	"DS0000"	"DS0000"	"DS0000"	"DS0000"
DITH	-	20.0	20.0	-
OBJECT	"OBJECT"	"OBJECT"	"OBJECT"	"OBJECT"
RA	!STATS.RA	!STATS.RA	!STATS.RA	DUMMY
DEC	!STATS.DEC	!STATS.DEC	!STATS.DEC	DUMMY
EQNX	2000.0	2000.0	2000.0	DUMMY
INSROT	-90.0	-90.0	-90.0	DUMMY
EXPTIME	NOP	NOP	NOP	NOP
FILTER	NOP	NOP	NOP	NOP
SLITX	NOP	NOP	NOP	NIP
SLITY	NOP	NOP	NOP	NOP
NSAMPLE	NOP	NOP	NOP	DUMMY
NFRAME	1	6	6	-
FRAMEID	&GET_F_NO[OHS A 1]	-	-	-
FRAMEID1	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]	-
FRAMEID2	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]	-
FRAMEID3	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]	-
FRAMEID4	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]	-
FRAMEID5	-	-	&GET_F_NO[OHS A 6]	-
FRAMEID6	-	-	&GET_F_NO[OHS A 6]	-
FRAMEID7	-	-	&GET_F_NO[OHS A 6]	-
FRAMEID8	-	-	&GET_F_NO[OHS A 6]	-

Parameter	Default Value		
	CS_SPECTROSCOPY	CS_SPECTROSCOPY2	CS_SPECTROSCOPY4
DATASET_ID	"DS0000"	"DS0000"	"DS0000"
DITH	-	10.0	10.0
PA	-	(-90.0 - !TSCL.INSROTPA)	(-90.0 - !TSCL.INSROTPA)
OBJECT	"OBJECT"	"OBJECT"	"OBJECT"
RA	DUMMY	DUMMY	DUMMY
DEC	DUMMY	DUMMY	DUMMY
EQNX	DUMMY	DUMMY	DUMMY
INSROT	DUMMY	DUMMY	DUMMY
EXPTIME	NOP	NOP	NOP
FILTER	NOP	NOP	NOP
SLITX	NOP	NOP	NIP
SLITY	NOP	NOP	NOP
NSAMPLE	NOP	NOP	NOP
NFRAME	1	6	6
FRAMEID	&GET_F_NO[OHS A 1]	-	-
FRAMEID1	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]
FRAMEID2	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]
FRAMEID3	-	-	&GET_F_NO[OHS A 6]
FRAMEID4	-	-	&GET_F_NO[OHS A 6]
LBOTTOM	-	2800	2800

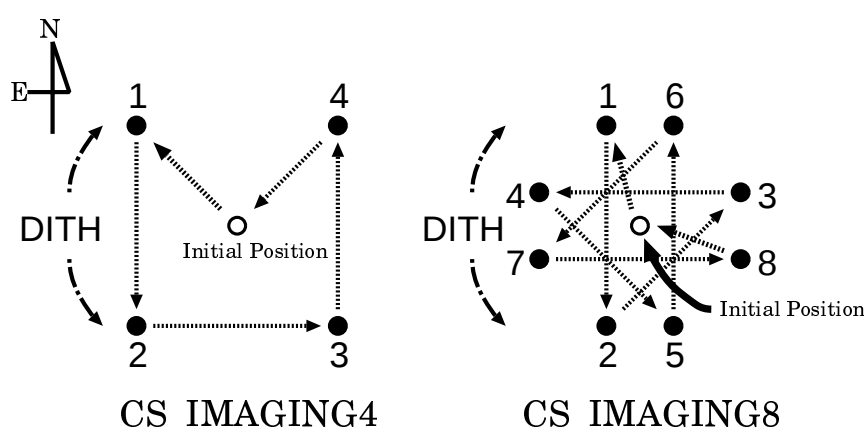
説明： 望遠鏡をディザリング、ノッディングしながらデータを取得します。

CS_IMAGING4, CS_IMAGING8, CS_SPECTROSCOPY2, CS_SPECTROSCOPY4 についてはパラメータ FRAMEID を FRAMEID1 ~ FRAMEID8 と振る点数だけ与えなければならないことに注意してください。

[CS_IMAGING]：望遠鏡は動かさずに積分時間 EXPTIME、NFRAME 枚のイメージを取得します。

[CS_IMAGING4, CS_IMAGING8]：望遠鏡を 4(8)点ディザリングして積分時間 EXPTIME、点数 × NFRAME 枚のイメージを取得します。AG によるガイディングは行いません。ディザリングパターンは下図のようになります。

[CS_BL64, CS_BL128]：高速部分読み出しによるイメージを取得します。

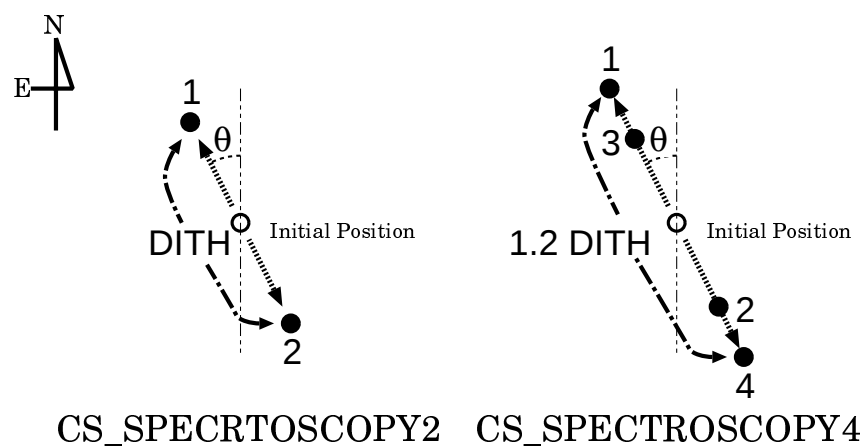


[CS_SPECTROSCOPY]：望遠鏡は動かさずに積分時間 EXPTIME、NFRAME 枚のイメージを取得します。

[CS_SPECTROSCOPY2, CS_SPECTROSCOPY4]：CCD オフセットによって望遠鏡を 2(4)点ノッディングして積分時間 EXPTIME、点数 × NFRAME 枚のイメージを取得します。

ノッディングパターンは下図のようになります。

このコマンドを実行する前にSETUPFIELD_AG かSETUPFIELD_VGW でAGガイディングを開始しておかなければなりません。また、AGの重心検出時の閾値を LBOTTOM で設定することが可能です。



更新日：1999/3/15

作者：小杉城治、岩室史英、本原顕太郎

GETOBJECT_AG

観測モード:

CS_IMAGING
CS_IMAGING4
CS_IMAGING8

パラメータ:

Parameter	Default Value		
	CS_IMAGING	CS_IMAGING4	CS_IMAGING8
DATASET_ID	"DS0000"	"DS0000"	"DS0000"
DITH	—	20.0	20.0
OBJECT	"OBJECT"	"OBJECT"	"OBJECT"
RA	!STATS.RA	!STATS.RA	!STATS.RA
DEC	!STATS.DEC	!STATS.DEC	!STATS.DEC
EQNX	2000.0	2000.0	2000.0
RA_AG	!STATS.RA	NOP	NOP
DEC_AG	!STATS.DEC	NOP	NOP
EQNX_AG	2000.0	NOP	NOP
INSROT	-90.0	-90.0	-90.0
EXPTIME	NOP	NOP	NOP
FILTER	NOP	NOP	NOP
SLITX	NOP	NOP	NOP
SLITY	NOP	NOP	NOP
NSAMPLE	NOP	NOP	NOP
NFRAME	1	6	6
FRAMEID	&GET_F_NO[OHS A 1]	—	—
FRAMEID1	—	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]
FRAMEID2	—	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]
FRAMEID3	—	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]
FRAMEID4	—	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]
FRAMEID5	—	—	&GET_F_NO[OHS A 6]
FRAMEID6	—	—	&GET_F_NO[OHS A 6]

説明 : SETUPFIELD_AG でフィールドのセットアップを行った場合に、望遠鏡をディザリングしながらデータを取得します。それ以外は基本的にはGETOBJECTと同じですのでそちらを参照してください。

ただし、ガイド星の座標を RA_AG、DEC_AG、EQNX_AG で与える必要があります。

更新日 : 1999/3/15

作者 : 小杉城治、岩室史英、本原顕太郎

GETOBJECT_VGW

観測モード:

CS_IMAGING
CS_IMAGING4
CS_IMAGING8
CS_IMAGING4SKY4

パラメータ:

Parameter	Default Value			
	CS_IMAGING	CS_IMAGING4	CS_IMAGING8	CS_IMAGING4SKY4
DATASET_ID	"DS0000"	"DS0000"	"DS0000"	
DITH	-	20.0	20.0	
OBJECT	"OBJECT"	"OBJECT"	"OBJECT"	
RA	!STATS.RA	!STATS.RA	!STATS.RA	
DEC	!STATS.DEC	!STATS.DEC	!STATS.DEC	
EQNX	2000.0	2000.0	2000.0	
INSROT	-90.0	-90.0	-90.0	
EXPTIME	NOP	NOP	NOP	
FILTER	NOP	NOP	NOP	
SLITX	NOP	NOP	NOP	
SLITY	NOP	NOP	NOP	
NSAMPLE	NOP	NOP	NOP	
NFRAME	1	6	6	
FRAMEID	&GET_F_NO[OHS A 1]	-	-	
FRAMEID1	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]	
FRAMEID2	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]	
FRAMEID3	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]	
FRAMEID4	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]	
FRAMEID5	-	-	&GET_F_NO[OHS A 6]	
FRAMEID6	-	-	&GET_F_NO[OHS A 6]	
FRAMEID7	-	-	&GET_F_NO[OHS A 6]	
FRAMEID8	-	-	&GET_F_NO[OHS A 6]	
DRA_SKY	-	-	-	180.0;
DDEC_SKY	-	-	-	180.0;

説明: SETUPFIELD_VGW でフィールドのセットアップを行った場合に、望遠鏡をディザリングしながらデータを取得します。観測モードが CS_IMAGING4SKY4 のとき以外については基本的には GETOBJECT と同じですのでそちらを参照してください。

[CS_IMAGING4SKY4]: まあ、だれかに聞いてや。

更新日: 1999/3/15

作者: 小杉城治、岩室史英、本原顕太郎

GETSTANDARD

観測モード:

CS_IMAGING
CS_IMAGING4
CS_IMAGING8
CS_BL64
CS_BL128
CS_SPECTROSCOPY
CS_SPECTROSCOPY2
CS_SPECTROSCOPY4

パラメータ:

Parameter	Default Value			
	CS_IMAGING	CS_IMAGING4	CS_IMAGING8	CS_BL64,CS_BL128
DATASET_ID	"DS0000"	"DS0000"	"DS0000"	"DS0000"
DITH	-	20.0	20.0	-
OBJECT	"STANDARD"	"STANDARD"	"STANDARD"	"STANDARD"
RA	!STATS.RA	!STATS.RA	!STATS.RA	DUMMY
DEC	!STATS.DEC	!STATS.DEC	!STATS.DEC	DUMMY
EQNX	2000.0	2000.0	2000.0	DUMMY
INSROT	-90.0	-90.0	-90.0	DUMMY
EXPTIME	NOP	NOP	NOP	NOP
FILTER	NOP	NOP	NOP	NOP
SLITX	NOP	NOP	NOP	NIP
SLITY	NOP	NOP	NOP	NOP
NSAMPLE	NOP	NOP	NOP	DUMMY
NFRAME	1	6	6	-
FRAMEID	&GET_F_NO[OHS A 1]	-	-	-
FRAMEID1	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]	-
FRAMEID2	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]	-
FRAMEID3	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]	-
FRAMEID4	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]	-
FRAMEID5	-	-	&GET_F_NO[OHS A 6]	-
FRAMEID6	-	-	&GET_F_NO[OHS A 6]	-
FRAMEID7	-	-	&GET_F_NO[OHS A 6]	-
FRAMEID8	-	-	&GET_F_NO[OHS A 6]	-

Parameter	Default Value		
	CS_SPECTROSCOPY	CS_SPECTROSCOPY2	CS_SPECTROSCOPY4
DATASET_ID	"DS0000"	"DS0000"	"DS0000"
DITH	-	10.0	10.0
PA	-	(-90.0 - !TSCL.INSROTPA)	(-90.0 - !TSCL.INSROTPA)
OBJECT	"OBJECT"	"OBJECT"	"OBJECT"
RA	DUMMY	DUMMY	DUMMY
DEC	DUMMY	DUMMY	DUMMY
EQNX	DUMMY	DUMMY	DUMMY
INSROT	DUMMY	DUMMY	DUMMY
EXPTIME	NOP	NOP	NOP
FILTER	NOP	NOP	NOP
SLITX	NOP	NOP	NIP
SLITY	NOP	NOP	NOP
NSAMPLE	NOP	NOP	NOP
NFRAME	1	6	6
FRAMEID	&GET_F_NO[OHS A 1]	-	-
FRAMEID1	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]
FRAMEID2	-	&GET_F_NO[OHS A 6]	&GET_F_NO[OHS A 6]
FRAMEID3	-	-	&GET_F_NO[OHS A 6]
FRAMEID4	-	-	&GET_F_NO[OHS A 6]
LBOTTOM	-	2800	2800

説明： 標準星を取得します。OBJECT のデフォルト値以外はGETOBJECT と同等です。

更新日：1999/4/8

作者：岩室史英

PROBEOFFSET

観測モード:

CISCO

パラメータ:

Parameter	Default Value
	CISCO
DX	0.0
DY	0.0
PA	(-90.0 - !TSCL.INSROTPA)

説明 : 望遠鏡を CISCO のフレームを見て **DX**pixels, **DY**pixels 振ります。振る精度は、AG_SH プローブの動作精度になります。

この時の CISCO のピクセルスケールは 0.116"/pix に設定されています。

更新日 : 1999/6/8

作者 : 岩室史英

SETUPFIELD

観測モード:

CS_IMAGING

パラメータ:

Parameter	Default Value
	CS_IMAGING
OBJECT	"OBJECT"
RA	!STATS.RA
DEC	!STATS.DEC
EQNX	2000.0
INSROT	-90.0

説明 : 望遠鏡を RA、DEC の方向に向け、インストゥルメント・ローテーターの角度を相対角度で **INSROT**° にします。

更新日 : 1999/3/15

作者 : 小杉城治

SETUPFIELD_AG

観測モード:

CS_IMAGING

CS_SPECTROSCOPY

パラメータ:

Parameter	Default Value	
	CS_IMAGING	CS_SPECTROSCOPY
OBJECT	"OBJECT"	"OBJECT"
RA	!STATS.RA	!STATS.RA
DEC	!STATS.DEC	!STATS.DEC
EQNX	2000.0	2000.0
RA_AG	!STATS.RA	!STATS.RA
DEC_AG	!STATS.DEC	!STATS.DEC
EQNX_AG	2000.0	2000.0
EXPTIME_AG	!VGWQ.AGE.EXPTIME	!VGWQ.AGE.EXPTIME
INSROT	-90.0	-90.0
LBOTTOM	2800	2800
EXPTIME	-	NOP
SLITX	-	NOP
SLITY	-	NOP
SLITXOPEN	-	NOP
FILTER	-	NOP
NSAMPLE	-	NOP
NFRAME	-	1
FRAMEID0	-	&Get_F_NO[OHS A]
FRAMEID1	-	&Get_F_NO[OHS A]
FRAMEID2	-	&Get_F_NO[OHS A]
FRAMEID3	-	&Get_F_NO[OHS Q]
FRAMEID4	-	&Get_F_NO[OHS Q]
LBOTTOM	-	2800
SKY_POS	-	15

説明： 望遠鏡を RA、DEC の方向に向け、インストゥルメント・ローテーターの角度を相対角度で INSROT° にします。

次に、RA=RA_AG, DEC=DEC_AG, Equinox=EQNX_AG の星を AG で捉えてガイディングを開始します。この時、AG の積分時間は EXPTIME_AG に重心検出の最低値は LBOTTOM に設定されます。

観測モードが CS_SPECTROSCOPY のときはさらに、以下のようにして目標天体がスリット上に導入されます。

1. CISCOS のスリットを SLITXOPEN×SLITY にして、さらに望遠鏡を DEC 方向に SKY_POS 振って、積分時間 EXPTIME、フィルタ FILTER で 1 フレーム取得します (スカイフレーム)。
2. 次に望遠鏡を元の位置に戻して同じく CISCOS で 1 フレーム取得します (オブジェクトフレーム)。
3. スリットを SLITX×SLITY にしてさらに CISCOS で 1 フレーム取得します (スリットフレーム)。
4. QDAS の画面に (オブジェクトフレーム-スカイフレーム) とスリットフレームが表示されるので、これらの画像で目標天体の位置とスリットの位置を指定します。

5. この位置情報を元に目標天体がスリット上に導入されます。

使い方： その辺の知っている人に聞いてください。

バグ：

- **EXPTIME_AG** のデフォルトが **!VGWQ.AGE.EXPTIME** になっていますが、以前に **VGW** を使ってガイド星を選定していない場合はどのような値が入るか保証されません。この値は必ず入れるようにしてください。とりあえず 1000(ms) を入れておくことをお勧めします。
- **CS_SPECTROSCOPY** モードで北天の天体をスリットに導入することはまだできません。

QDASで処理を行う関係上 **NFRAME** と **FRAMEID1~FRAMEID15** は変更しないでください。また、このコマンドを発行する前に必ず **BOOTQDAS** を実行しておいてください。

更新日：1999/3/15

作者：小杉城治

SETUPFIELD_VGW

観測モード:

CS_IMAGING

CS_SPECTROSCOPY

パラメータ:

Parameter	Default Value	
	CS_IMAGING	CS_SPECTROSCOPY
OBJECT	"OBJECT"	"OBJECT"
RA	!STATS.RA	!STATS.RA
DEC	!STATS.DEC	!STATS.DEC
EQNX	2000.0	2000.0
AG_SELECT	MANUAL	MANUAL
INSROT	-90.0	-90.0
LBOTTOM	2800	2800
EXPTIME	-	NOP
SLITX	-	NOP
SLITY	-	NOP
SLITXOPEN	-	NOP
FILTER	-	NOP
NSAMPLE	-	NOP
NFRAME	-	1
FRAMEID0	-	&Get_F_NO[OHS A]
FRAMEID1	-	&Get_F_NO[OHS A]
FRAMEID2	-	&Get_F_NO[OHS A]
FRAMEID3	-	&Get_F_NO[OHS Q]
FRAMEID4	-	&Get_F_NO[OHS Q]
LBOTTOM	-	2800
SKY_POS	-	15

説明： ガイド星を VGW で選択する以外はSETUPFIELD_AG と同じです。

AG_SELECT パラメータは VGW でのガイド星の選択のモードです。AUTO, SEMI-AUTO, AUTO から選択できます。

使い方： その辺の知っている人に聞いてください。

バグ：

- CS_SPECTROSCOPY モードで北天の天体をスリットに導入することはまだできません。

更新日：1999/3/15

作者：小杉城治

SETUPOBE

観測モード:

CISCO

パラメータ:

Parameter	Default Value
	CISCO
PATH	NOP
FILTER	NOP

説明 : CISCO のセットアップを行います。

OBCP ローカルに取得データを保存するパスを **PATH** に設定し、フィルターホイールを一度ホームポジションに動かしてから **FILTER** で指定されたフィルターにセットします。最後にスリットを全開にして終了します。

更新日 : 1999/3/15

作者 : 小杉城治、本原顕太郎

SHOWIMAGE

観測モード:

CISCO

パラメータ:

Parameter	Default Value
	CISCO
DATASET_ID	"DS0000"
FRAMEID	!FITS,OHS,FRAMEID

説明： QDASのビューワーに **FRAMEID** のイメージを表示します。**FRAMEID** を省略すると直前に取得されたイメージが表示されます。

DATASET_ID はダミーです。

更新日：1999/3/15

作者：小杉城治

SHUTDOWNBE

観測モード:

CISCO

パラメータ:

Parameter	Default Value
	CISCO
MODE	ALONE

説明 : CISCO を待機状態にします。

フィルターを BLANK にし、スリットを全開にして、最後に messia III のモードを **MODE** にセットします。

更新日 : 1999/3/3

作者 : 本原顕太郎

SHUTDOWNQDAS

観測モード:

CISCO

パラメータ: ありません。

説明: QDASを終了します。

更新日: 1999/3/3

作者: 小杉城治

TELOFFSET

観測モード:

CISCO

パラメータ:

Parameter	Default Value
	CISCO
DRA	0.0
DDEC	0.0

説明： 望遠鏡を赤経方向に **DRA** 秒角、赤緯方向に **DDEC** 秒角振ります。振る精度は望遠鏡のエンコーダ精度になります。

AG でガイディングを行っているときはTELOFFSET_AGを使ってください。

更新日：1999/3/30

作者：岩室史英

TELOFFSET_AG

観測モード:

CISCO

パラメータ:

Parameter	Default Value
	CISCO
DRA	0.0
DDEC	0.0

説明： AGでガイディングを行っているときに望遠鏡を赤経方向に **DRA** 秒角、赤緯方向に **DDEC** 秒角振ります。振る精度は望遠鏡のエンコード精度になります。

ガイディングを行っていないときはTELOFFSETを使ってください。

更新日：1999/3/30

作者：岩室史英

TELOFFSETBYVGW

観測モード:

CISCO

パラメータ: ありません。

説明: VGWで天体を選択して、その天体の方向に望遠鏡を振ります。

更新日: 1999/06/08

作者: 岩室史英、田口智之

付 録 E CISC O 装 置 テ ー ブ ル

この装置テーブルは 1999 年 11 月 22 日現在ものです。

E.1 パラメータ定義ファイル

ARCHIVE.para

```
#FRAME ID
FRAMEID \
TYPE=CHAR \
DEFAULT=NOP \
NOP=NOP

#LOGFILE DIRECTORY
LPATH \
TYPE=CHAR \
DEFAULT=NOP \
NOP="/home/messia/messia3/cisco/SUKACMD"

#LOBFIL E NAME
LNAME \
TYPE=CHAR \
DEFAULT=NOP \
NOP="data.log"

#MODE OF ARCHIVE
AMODE \
TYPE=CHAR \
SET=COUNT, SND \
DEFAULT=NOP \
NOP=COUNT
```

FILTER.para

```
#FILTER WHEEL 1
WHEEL1 \
TYPE=CHAR \
SET="z", "J", "H", "Kp", "K", "H+Kp", "N204", "NONE", "HOME" \
DEFAULT=NOP \
NOP=NOP

#FILTER WHEEL 2
WHEEL2 \
TYPE=CHAR \
SET="N215", "H2(1-0)", "H2(2-1)", "zJGr", "JHGr", "wKGr", "Pr", "NONE", "HOME" \
DEFAULT=NOP \
NOP=NOP

#FILTER SELECTION
SELECT \
TYPE=CHAR \
SET="z", "J", "H", "Kp", "K", "H+Kp", "N204", "N215", "H2(1-0)", "H2(2-1)", "zJGr", "JHGr", "wKGr", "Pr", "BLANK", "HOME" \
DEFAULT=NOP \
NOP=NOP
```

HAWAII.para

```

#OBJECT NAME
OBJECT \
TYPE=CHAR \
DEFAULT=NOP \
NOP=NOP

#DATA TYPE
DATATYPE \
TYPE=CHAR \
SET=OBJECT,BIAS,DARK,FLAT,COMP,STANDARD_STAR,SKY,THERMAL,TEST \
DEFAULT=NOP \
NOP=NOP

#FRAME ID
FRAMEID \
TYPE=CHAR \
DEFAULT=NOP \
NOP=NOP

#DATASET ID
DATASET \
TYPE=CHAR \
DEFAULT=NOP \
NOP=NOP

#DIRECTORY
FPATH \
TYPE=CHAR \
DEFAULT=NOP \
NOP=NOP

#FILE PREFIX
PREFIX \
TYPE=CHAR \
DEFAULT=NOP \
NOP=NOP

#FILE COUNTER
FCOUNT \
TYPE=NUMBER \
FORMAT=%-4d \
MAX=9999 \
MIN=1 \
DEFAULT=NOP \
NOP=NOP

#EXPOSURE TIME
EXPTIME \
TYPE=NUMBER \
FORMAT=%-8.3f \
MAX=3600.000 \
MIN=0.025 \
DEFAULT=NOP \
NOP=NOP

#MODE OF EXPOSURE
EXPMODE \
TYPE=CHAR \
SET=NORMAL,HYBRID,BLOCK64,BLOCK128 \
DEFAULT=NOP \
NOP=NOP

#NUMBER OF MULTIPLE-SAMPLING
NSAMPLE \
TYPE=NUMBER \
FORMAT=%-2d \
MAX=6 \
MIN=1 \
DEFAULT=NOP \
NOP=NOP

#NUMBER OF FRAMES
NFRAME \

```

```

TYPE=NUMBER \
FORMAT=%-3d \
MAX=999 \
MIN=1 \
DEFAULT=NOP \
NOP=NOP

#START INTEGRATION
INTEG \
TYPE=CHAR \
SET=WAIT,GO,CANCEL \
DEFAULT=WAIT \
NOP=WAIT

```

MODE.para

```

#MODE
MODE \
TYPE=CHAR \
SET=ALONE,LOCAL,SLAVE \
DEFAULT=SLAVE \
NOP=SLAVE

```

SLIT.para

```

#SLIT X
#PLIMIT: MAX=131.90
X \
TYPE=NUMBER \
FORMAT=%-6.2f \
MAX=135.00 \
MIN=0.00 \
DEFAULT=NOP \
NOP=NOP

#SLIT Y
#PLIMIT: MAX=127.65
Y \
TYPE=NUMBER \
FORMAT=%-6.2f \
MAX=135.00 \
MIN=0.00 \
DEFAULT=NOP \
NOP=NOP

```

WAIT.para

```

#WAIT TIME
TIME \
TYPE=NUMBER \
FORMAT=%-6.2f \
MAX=1000.00 \
MIN=0.00 \
DEFAULT=NOP \
NOP=0.00

```

E.2 装置依存コマンドスクリプトスケルトン(スケルトン)

観測モードごとに表示しています。

E.2.1 CISCO

AGOFFSET.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=AGOffset
SCRIPT_ID=AGOFFSET.sk
SCRIPT_AUTHOR=MOTOHARA, IWAMURO
SCRIPT_UPDATE=1999.05.28
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DX=0.0
DY=0.0
PA=(-90.0 - !TSC.LINROTPA )
</Default_Parameter>

<Command>
:START
Exec OBS CALC SIN_ARG=$PA COS_ARG=$PA TAN_ARG=$PA ;

:MAIN_START
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec OBS CONVSECRADec RASEC=(0.116 * !STATOBS.COS * $DX - 0.116 * !STATOBS.SIN * $DY ) DECSEC=(-0.116 * !STATOBS.SIN * $DX - 0.116\
* !STATOBS.COS * $DY ) RABASE=!STATS.RA DECBASE=!STATS.DEC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.116 * !STATOBS.COS * $DX - 0.116 * !STATOBS.SIN * $DY ) DEC_REL=(-0.116 * !STATOBS.SIN\
* $DX - 0.116 * !STATOBS.COS * $DY ) AZ=@STATUS EL=@STATUS ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CEN\
TROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=@STATUS ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
:MAIN_END

:END
</Command>
```

BOOTQDAS.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=BootQDAS
Script_ID=OHS0001
Script_Version=1.0
Script_Author=George
Script_Update=1999.03.03
Dispatcher_Version=1.0
</Header>

<Default_Parameter>
</Default_Parameter>

<Command>
:START

:MAIN_START
Exec OBC viewer motor=on INSTRUMENT_NAME=OHS ,
Exec OBC Pipeline_Parameter_Exec_Flag motor=on INSTRUMENT_NAME=OHS type=bias EXEC_FLAG=off ,
Exec OBC Pipeline_Parameter_Exec_Flag motor=on INSTRUMENT_NAME=OHS type=dark EXEC_FLAG=off ,
Exec OBC Pipeline_Parameter_Exec_Flag motor=on INSTRUMENT_NAME=OHS type=flat EXEC_FLAG=off ,
Exec OBC Pipeline_Parameter_Exec_Flag motor=on INSTRUMENT_NAME=OHS type=sky EXEC_FLAG=off ,

:MAIN_END

:END
</Command>
```

BOOTQDASVGW.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=BootQDASVGW
```

```

Script_ID=OHS0001
Script_Version=1.0
Script_Author=George
Script_Update=1999.03.03
Dispatcher_Version=1.0
</Header>

<Default_Parameter>
</Default_Parameter>

<Command>
:START

:MAIN_START
Exec OBC viewer motor=on INSTRUMENT_NAME=VGW ,
Exec OBC Pipeline_Parameter_Exec_Flag motor=on INSTRUMENT_NAME=VGW type=bias EXEC_FLAG=off ,
Exec OBC Pipeline_Parameter_Exec_Flag motor=on INSTRUMENT_NAME=VGW type=dark EXEC_FLAG=off ,
Exec OBC Pipeline_Parameter_Exec_Flag motor=on INSTRUMENT_NAME=VGW type=flat EXEC_FLAG=off ,
Exec OBC Pipeline_Parameter_Exec_Flag motor=on INSTRUMENT_NAME=VGW type=sky EXEC_FLAG=off ,

:MAIN_END

:END
</Command>

```

BOOTTELESCOPE.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=BootTelescope
SCRIPT_ID=BOOTTELESCOPE.sk
DISPATCHER_VER=1.0
OBCP_VER=1.0
DATE=1999.02.18
AUTHOR=George
</Header>

<Default_Parameter>
</Default_Parameter>

<Command>
:START

:MAIN_START
#Exec TSC DomeLight Motor=OFF ;
#Exec TSC DomeShutter Motor=ON Position=OPEN TopScreen=LINK ;
#Exec TSC WindScreen Motor=ON Coord=TSC ,
{
  Exec TSC TopScreen Motor=ON Coord=ABS P_Select=FRONT Position=3.0 ;
  Exec TSC TopScreen Motor=ON Coord=ABS P_Select=REAR Position=1.5 ,
} ,
Exec TSC InsRot Motor=ON Telescope=LINK Coord=REL Position=0.0 F_Select=CS ,
#Exec TSC ADC Motor=ON Mode=OUT Telescope=LINK Coord=REL Position=0.0 F_Select=CS ,
{
  Exec TSC M3Drive Select=NS_OPT Motor=ON Position=OUT ;
  Exec TSC M3Drive Select=NS_IR Motor=ON Position=OUT ,
} ,
Exec TSC TelFocus Motor=ON Coord=TSC F_Select=CS_opt ,
#Exec TSC AG_Parts Motor=ON Shutter=OPEN ,
Exec TSC AGSH_Probe Motor=ON Coord=rest ,

:MAIN_END

:END
</Command>

```

CALIBIMAGE.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=CalibImage
SCRIPT_ID=CALIBIMAGE.sk
SCRIPT_AUTHOR=George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
FRAMEID=FITS.OHS.FRAMEID
</Default_Parameter>

<Command>
:START

:MAIN_START

:MAIN_END
Exec OBC Pipeline Readout=on Instrument_name=OHS input_frame=$FRAMEID output_frame=default ;

:END
</Command>

```

CHECKFIELD.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=CheckField
SCRIPT_ID=CHECKFIELD.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
OBJECT="FIELDCHECK"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=1
FRAMEID=&GET_F_NO [OHS A]
</Default_Parameter>

<Command>
:START
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=TEST PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID ;\

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID INTEG=GO ;

:MAIN_END
Exec OBC QDAS_DISPLAY Instrument_Name=OHS Input_Frame=$FRAMEID ;

:END
</Command>
```

CHECKFOCUS.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=CheckFocus
SCRIPT_ID=CHECKFOCUS.sk
SCRIPT_AUTHOR=IWAMURO
SCRIPT_UPDATE=1999.06.09
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
OBJECT="FIELDCHECK"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=1
FRAMEID=&GET_F_NO [OHS A]
Z=0.1
</Default_Parameter>

<Command>
:START
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=TEST PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID ;\

Exec TSC TelFocus Motor=on Coord=TSC F_Select=CS_opt z=$Z ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[STATL.ZDIF -0.005 0.005] ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID INTEG=GO ;

:MAIN_END
Exec OBC QDAS_DISPLAY Instrument_Name=OHS Input_Frame=$FRAMEID ;

:END
</Command>
```

DOSH.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=DOSH
Script_ID=OHS0001
Script_Version=1.0
Script_Author=George
```

```

Script_Update=1999.03.16
Dispatcher_Version=1.0
</Header>

<Default_Parameter>
</Default_Parameter>

<Command>
:START
Exec TSC AG_TRACKING CALC_REGION=1 MOROT=OFF ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
Exec TSC AG Readout=OFF ;
Exec VGW AG_AUTO_SELECT MOTOR=ON EQUINOX=2000.0 RA=!STATS.RA DEC=!STATS.DEC F_Select=P_OPT PROBE_RA=!STATS.RA PROBE_DEC=!STATS.DEC\
AG_PA=0.0 PROBE_R=0.0 PROBE_THETA=0.0 PROBE_X=0.0 PROBE_Y=0.0 SELECT_Mode=MANUAL DSS_Mode=OFF AG_AREA=AG1 INSTRUMENT_NAME=OHS ;
Exec TSC TELDRIVE COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=!VGWQ.AGE.EXPTIME BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=103 Y1=128 X2=303\
Y2=328 ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=153 Y1=178 X2=293 Y2=278 I_SEIL=65535 I_BOTTOM=3500 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=ANY Calc_Region=1 X=263.11 Y=228.00 ;
Exec TSC AG_TRACKING CALC_REGION=1 MOTOR=ON ;
Exec OBS Check_Status Mode=AND Timeout=0120 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0045 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

:MAIN_START
Exec TSC OpeRequest Message="Shack Hartmann Test Please!" ;
Exec TSC Native CMD="nnnnnn1A10080BSPRI%" ;

:MAIN_END
Exec VGW V_lan_data_fits_file motor=on v_lan_data=SH frame_no=&Get_F_NO [VGW A] ,

:END
</Command>

```

FOCUSAG.sk

```

<Header>
OBE_ID=OHS
OBE_mode=CISCO
COMMAND=FocusAG
Script_ID=OHS0001
Script_Version=1.0
Script_Author=George
Script_Update=1999.03.15
Dispatcher_Version=1.0
</Header>

<Default_Parameter>
Observation-ID=nop
DATASET_ID=DS000
Z=0.0
DELTAZ=0.05
OBJECT="OBJECT"
#RA=!STATS.RA
#DEC=!STATS.DEC
#EQUINOX=2000.0
#INSROT=-90
EXPTIME=nop
FRAMEID1=&GET_F_NO [VGW A]
FRAMEID2=&GET_F_NO [VGW A]
FRAMEID3=&GET_F_NO [VGW A]
FRAMEID4=&GET_F_NO [VGW A]
FRAMEID5=&GET_F_NO [VGW A]
FRAMEID6=&GET_F_NO [VGW A]
FRAMEID7=&GET_F_NO [VGW A]
FRAMEID8=&GET_F_NO [VGW A]
FRAMEID9=&GET_F_NO [VGW A]
FRAMEID10=&GET_F_NO [VGW A]
FRAMEID11=&GET_F_NO [VGW A]
FRAMEID12=&GET_F_NO [VGW A]
FRAMEID13=&GET_F_NO [VGW A]
FRAMEID14=&GET_F_NO [VGW A]
FRAMEID15=&GET_F_NO [VGW A]
</Default_Parameter>

<Command>
:START
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
Exec TSC AG Readout=OFF ,
#EXEC TSC INSROT F_SELECT=CS TELESCOPE=LINK COORD=ABS POSITION=$INSROT ,
#EXEC TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX DIRECTION=TSC ;
#Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
#Exec TSC AGSH_Probe Motor=ON Coord=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX F_Select=CS PMRA=000.0000 PMDEC=000.0000 E=OFF ANAB=+0.00\
0 ;

:MAIN_START
Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=$EXPTIME BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=32 Y1=32 X2=410 Y2=410 ;

exec TSC TelFocus Motor=on Coord=TSC F_Select=CS_OPT z=($Z - DELTAZ * 2.0) ;
exec OBS CHECK_STATUS MODE=AND TIMEOUT=0030 N1=[STATL.ZDIF -0.005 0.005] ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;

```

```

exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID1 ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID2 ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID3 ;

exec TSC TelFocus Motor=on Coord=TSC F_Select=CS_OPT z=($Z - $DELTAZ * 1.0) ;
exec OBS CHECK_STATUS MODE=AND TIMEOUT=0030 N1=[STATL.ZDIF -0.005 0.005] ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID4 ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID5 ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID6 ;

exec TSC TelFocus Motor=on Coord=TSC F_Select=CS_OPT z=$Z ;
exec OBS CHECK_STATUS MODE=AND TIMEOUT=0030 N1=[STATL.ZDIF -0.005 0.005] ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID7 ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID8 ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID9 ;

exec TSC TelFocus Motor=on Coord=TSC F_Select=CS_OPT z=($Z + $DELTAZ * 1.0) ;
exec OBS CHECK_STATUS MODE=AND TIMEOUT=0030 N1=[STATL.ZDIF -0.005 0.005] ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID10 ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID11 ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID12 ;

exec TSC TelFocus Motor=on Coord=TSC F_Select=CS_OPT z=($Z + $DELTAZ * 2.0) ;
exec OBS CHECK_STATUS MODE=AND TIMEOUT=0030 N1=[STATL.ZDIF -0.005 0.005] ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID13 ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID14 ;
exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
exec VGW V_lan_data_fits_file motor=on v_lan_data=AG frame_no=$FRAMEID15 ;

:MAIN_END
exec OBC FRAME_REGION motor=on instrument_name=VGW mode=focus input_frame=$FRAMEID7 ;
exec OBC TELESCOPE_FOCUS motor=on instrument_name=VGW input_frame=[$FRAMEID1 $FRAMEID2 $FRAMEID3 $FRAMEID4 $FRAMEID5 $FRAMEID6 $FRAMEID7 $FRAMEID8 $FRAMEID9 $FRAMEID10 $FRAMEID11 $FRAMEID12 $FRAMEID13 $FRAMEID14 $FRAMEID15] region=default ;
EXEC TSC TELFOCUS MOTOR=ON COORD=TSC Z=OBC.VGW.BESTFOCUS ;
exec OBS CHECK_STATUS MODE=AND TIMEOUT=0030 N1=[STATL.ZDIF -0.005 0.005] ;

:END
</Command>

```

FOCUSOBE.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=FocusOBE
Script_ID=OHS0001
Script_Version=1.0
Script_Author=George
Script_Update=1999.03.15
Dispatcher_Version=1.0
</Header>

<Default_Parameter>
Observation_ID=nop
DATASET_ID=DS0000
Z=0.1
DELTAZ=0.1
OBJECT="FOCUSING"
EXPTIME=nop
FILTER=nop
SLITX=nop
SLITY=nop
NSAMPLE=nop
FRAMEID1=&GET_F_NO [OHS A]
FRAMEID2=&GET_F_NO [OHS A]
FRAMEID3=&GET_F_NO [OHS A]
FRAMEID4=&GET_F_NO [OHS A]
FRAMEID5=&GET_F_NO [OHS A]
FRAMEID6=&GET_F_NO [OHS A]
FRAMEID7=&GET_F_NO [OHS A]
FRAMEID8=&GET_F_NO [OHS A]
FRAMEID9=&GET_F_NO [OHS A]
FRAMEID10=&GET_F_NO [OHS A]
FRAMEID11=&GET_F_NO [OHS A]
FRAMEID12=&GET_F_NO [OHS A]
FRAMEID13=&GET_F_NO [OHS A]
FRAMEID14=&GET_F_NO [OHS A]
FRAMEID15=&GET_F_NO [OHS A]
</Default_Parameter>

<Command>
:START
{

```

```

Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=TEST PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID ;\

} ;

:MAIN_START
Exec TSC TelFocus Motor=on Coord=TSC F_Select=CS_opt z=($Z - $DELTAZ * 2.0) ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[STATL.ZDIF -0.005 0.005] ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID1 INTEG=GO ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID2 INTEG=GO ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID3 INTEG=GO ;

Exec TSC TelFocus Motor=on Coord=TSC F_Select=CS_opt z=($Z - $DELTAZ ) ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[STATL.ZDIF -0.005 0.005] ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID4 INTEG=GO ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID5 INTEG=GO ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID6 INTEG=GO ;

Exec TSC TelFocus Motor=on Coord=TSC F_Select=CS_opt z=$Z ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[STATL.ZDIF -0.005 0.005] ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID7 INTEG=GO ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID8 INTEG=GO ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID9 INTEG=GO ;

Exec TSC TelFocus Motor=on Coord=TSC F_Select=CS_opt z=($Z + $DELTAZ ) ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[STATL.ZDIF -0.005 0.005] ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID10 INTEG=GO ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID11 INTEG=GO ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID12 INTEG=GO ;

Exec TSC TelFocus Motor=on Coord=TSC F_Select=CS_opt z=($Z + $DELTAZ * 2.0) ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[STATL.ZDIF -0.005 0.005] ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID13 INTEG=GO ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID14 INTEG=GO ;
Exec OHS HAWAII NFRAME=1 FRAMEID=$FRAMEID15 INTEG=GO ;

:MAIN_END
Exec OBC FRAME_REGION motor=on instrument_name=OHS mode=focus input_frame=$FRAMEID7 ;
Exec OBC TELESCOPE_FOCUS motor=on instrument_name=OHS input_frame=[$FRAMEID1 $FRAMEID2 $FRAMEID3 $FRAMEID4 $FRAMEID5 $FRAMEID6 $FR\
AMEID7 $FRAMEID8 $FRAMEID9 $FRAMEID10 $FRAMEID11 $FRAMEID12 $FRAMEID13 $FRAMEID14 $FRAMEID15] region=default ;
Exec TSC TELFOCUS MOTOR=ON COORD=TSC Z=1OBCQ.OHS.BESTFOCUS ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[STATL.ZDIF -0.005 0.005] ;

:END
</Command>

```

GETDARK.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=GetDark
SCRIPT_ID=GETDARK.sk
DISPATCHER=1.0
OBCP_Ver=3.2
AUTHOR=Motohara/George
DATE=1999.03.15
</Header>

<Default_Parameter>
DATASET_ID=DS0000
OBJECT="DARK"
EXPTIME=NOP
NSAMPLE=NOP
NFRAME=1
FRAMEID=&GET_F_NO[OHS A 1]
</Default_Parameter>

<Command>
:START
Exec OHS FILTER SELECT="BLANK" ;

:MAIN_START
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=DARK NFRAME=$NFRAME FRAMEID=$FRAMEID PREFIX="dark." FCOUNT=NOP EXPTIME=$EXPTIME EXPMODE=NOR\
MAL DATASET=$DATASET_ID INTEG=GO NSAMPLE=$NSAMPLE ;

:MAIN_END

:END
</Command>

```

PROBEOFFSET.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=ProbeOffset
SCRIPT_ID=PROBEOFFSET.sk
SCRIPT_AUTHOR=MOTOHARA, IWAMURO
SCRIPT_UPDATE=1999.05.28
DISPATCHER_VERSION=1.0

```

```

</Header>

<Default_Parameter>
DX=0.0
DY=0.0
PA=(-90.0 - !TSCL.INSROTPA )
</Default_Parameter>

<Command>
:START
Exec OBS CALC SIN_ARG=$PA COS_ARG=$PA TAN_ARG=$PA ;

:MAIN_START
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=0.0 DEC_REL=0.0 AZ=@STATUS EL=@STATUS ROTATOR=@STATUS PROBE=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CENTROID_Y2=@STATUS ;
Exec OBS CONVSECRAD SEC=(0.116 * !STATOBS.COS * $DX - 0.116 * !STATOBS.SIN * $DY ) DECSEC=(-0.116 * !STATOBS.SIN * $DX - 0.116 * !STATOBS.COS * $DY ) RABASE=!STATS.RA DECBASE=!STATS.DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RAREL DEC=!STATOBS.DECRELOC ;
Exec TSC AGSH_Probe Motor=ON Coord=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=@STATUS F_Select=CS PMRA=000.0000 PMDEC=0\00.0000 E=OFF ANAB=+0.000 ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWCENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=@STATUS ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
:MAIN_END

:END
</Command>

```

SETUPCALIB.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=SetupCalib
SCRIPT_ID=SETUPCALIB.sk
SCRIPT_AUTHOR=George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="D80000"
FRAMEID=!FITS.OHS.FRAMEID
</Default_Parameter>

<Command>
:START

:MAIN_START
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=BIAS Exec_Flag=off ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=DARK Exec_Flag=off ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=FLAT Exec_Flag=off ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=off ;
Exec OBC Calib_File Readout=on Instrument_name=OHS TYPE=SKY input_frame=$FRAMEID ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=on ;

:MAIN_END

:END
</Command>

```

SETUPFIELD.sk

```

<Header>
OBE_ID=OHS
OBE_mode=CISCO
COMMAND=SetupField
SCRIPT_ID=SETUPFIELD.sk
DISPATCHER_VERSION=1.0
OBCP_VERSION=1.0
DATE=1999.02.18
AUTHOR=George
</Header>

<Default_Parameter>
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000
AG_SELECT=AUTO
INSROT=-90
I_BOTTOM=2800
</Default_Parameter>

<Command>
:START

{
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
Exec TSC AG Readout=OFF ,
Exec TSC InsRot Motor=ON TELESCOPE=LINK Coord=ABS POSITION=$INSROT F_Select=CS_OPT ,

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```

Exec TSC TelDrive Motor=ON Coord=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX Direction=TSC ,
Exec VGW Ag_Auto_Select Motor=ON EQUINOX=$EQUINOX RA=$RA DEC=$DEC F_Select=CS Probe_RA=$RA Probe_DEC=$DEC AG_PA=0.0 Probe_R=0.0 Probe_THETA=000.0 Probe_X=0.0 Probe_Y=0.0 Select_Mode=$AG_SELECT DSS_Mode=ON AG_Area=AG1 Instrument=CAC ,
} ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
Exec TSC AGSH_Probe Motor=ON Coord=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=$EQUINOX F_Select=CS PMRA=000.0000 PMDEC=\
000.0000 E=OFF ANAB=+0.000 ;
#Exec TSC AG_Parts Motor=ON Shutter=OPEN ;

:MAIN_START
Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=3000 BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=0 Y1=0 X2=511 Y2=511 ;
Exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG Readout=OFF ;
Exec VGW REGION_SelectION V_LAN_DATA=AG ;
Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=!VGWQ.AGE.EXPTIME BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=!VGWQ.AGE.X1 Y1=!VGWQ.AGE.Y1 X2=!VGWQ.AGE.X2 Y2=!VGWQ.AGE.Y2 ;
Exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec VGW AG_GUIDE_Area_SelectION Motor=ON ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!VGWQ.AGW1.X1 Y1=!VGWQ.AGW1.Y1 X2=!VGWQ.AGW1.X2 Y2=!VGWQ.AGW1.Y2 I_\
SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Current Calc_Region=1 X=255.00 Y=255.00 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;

:MAIN_END
Exec OBS Check_Status Mode=AND Timeout=0030 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0030 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
Exec OBS Check_Status Mode=AND Timeout=0015 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0030 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;

:END
</Command>

```

SETUPOBE.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=SETUPOBE
SCRIPT_ID=SETUPOBE.sk
SCRIPT_AUTHOR=Motohara/Iwamuro
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
PATH=NOP
FILTER=NOP
</Default_Parameter>

<Command>
:START

:MAIN_START
Exec OHS HAWAII FPATH=$PATH PREFIX="cisco." OBJECT="test" DATATYPE=TEST DATASET="TEST" NSAMPLE=1 EXPMODE=NORMAL EXPTIME=2 ;
Exec OHS FILTER SELECT="HOME" ;
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=135 ;
Exec OHS SLIT Y=135 ;

:MAIN_END

:END
</Command>

```

SHOWIMAGE.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=ShowImage
SCRIPT_ID=SHOWIMAGE.sk
SCRIPT_AUTHOR=George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
FRAMEID=!FITS.OHS.FRAMEID
</Default_Parameter>

<Command>
:START

:MAIN_START

:MAIN_END
Exec OBC QDAS_DISPLAY Instrument_Name=OHS Input_Frame=$FRAMEID ;

:END
</Command>

```

SHUTDOWNBE.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=SHUTDOWNBE
SCRIPT_ID=SHUTDOWNBE.sk
SCRIPT_AUTHOR=Motohara
SCRIPT_UPDATE=1999.03.03
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
Mode=ALONE
</Default_Parameter>

<Command>
:START

:MAIN_START
Exec OHS FILTER SELECT="BLANK" ;
Exec OHS SLIT X=135 ;
Exec OHS SLIT Y=135 ;
Exec OHS Mode Mode=$Mode ;

:MAIN_END

:END
</Command>
```

SHUTDOWNQDAS.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=ShutDownQDAS
Script_ID=OHS0001
Script_Version=1.0
Script_Author=George
Script_Update=1999.03.03
Dispatcher_Version=1.0
</Header>

<Default_Parameter>
</Default_Parameter>

<Command>
:START

:MAIN_START
Exec OBC viewer motor=off INSTRUMENT_NAME=OHS ;

:MAIN_END

:END
</Command>
```

SHUTDOWNQDASVGW.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=ShutDownQDASVGW
Script_ID=OHS0001
Script_Version=1.0
Script_Author=George
Script_Update=1999.03.03
Dispatcher_Version=1.0
</Header>

<Default_Parameter>
</Default_Parameter>

<Command>
:START

:MAIN_START
Exec OBC viewer motor=off INSTRUMENT_NAME=VGW ;

:MAIN_END

:END
</Command>
```

SHUTDOWNTELESCOPE.sk

```

<Header>
OBE_ID=CAC
OBE_MODE=CISCO
COMMAND=ShutdownTelescope
SCRIPT_ID=SHUTDOWNTELESCOPE.sk
DISPATCHER_VER=1.0
OBCP_VER=1.0
DATE=1999.02.18
AUTHOR=George
</Header>

<Default_Parameter>
</Default_Parameter>

<Command>
:START

:MAIN_START
{
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
Exec TSC AG_Readout=OFF ,
Exec TSC AG_Parts Motor=ON Shutter=CLOSE ,
} ,
{
Exec TSC AGSH_Probe Motor=ON Coord=rest ;
Exec TSC AGSH_Probe Motor=OFF ,
} ,
{
Exec TSC InsRot Motor=ON Telescope=FREE Coord=ABS Position=+0.0 F_Select=CS ;
Exec TSC InsRot Motor=OFF F_Select=CS ,
} ,
#{
#Exec TSC ADC Motor=ON Telescope=FREE Coord=REL Position=+0.0 ;
#Exec TSC ADC Motor=OFF F_Select=CS ,
#} ,
{
#Exec TSC TelFocus Motor=ON F_Select=CS_opt Coord=REL Z=+0.0 ;
#Exec TSC TelFocus Motor=OFF F_Select=CS_opt ,
} ,
{
Exec TSC Windscreen Motor=ON Coord=ABS Position=1.0 ;
Exec TSC Windscreen Motor=OFF ,
} ,
{
Exec TSC TopScreen Motor=ON Coord=ABS P_Select=FRONT Position=16 ;
Exec TSC TopScreen Motor=ON Coord=ABS P_Select=REAR Position=10 ;
Exec TSC DomeShutter Motor=ON Position=CLOSE ;
Exec TSC AzElDrive Motor=ON Coord=ABS AZ=-90.0 EL=+89.0 ,
Exec TSC TopScreen Motor=OFF ,
Exec TSC DomeShutter Motor=OFF ,
} ;

:MAIN_END

:END
</Command>

```

TELOFFSET.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=TelOffset
SCRIPT_ID=TELOFFSET.sk
SCRIPT_AUTHOR=IWAMURO
SCRIPT_UPDATE=1999.03.30
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DRA=0.0
DDEC=0.0
</Default_Parameter>

<Command>
:START

:MAIN_START
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec OBS CONVSECRADec RASEC=$DRA DECSEC=$DDEC RABASE=!STATS.RA DECBASE=!STATS.DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
:MAIN_END

:END
</Command>

```

TELOFFSETBYVGW.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=TelOffsetbyVGW
SCRIPT_ID=TELOFFSETBYVGW.sk

```

```

SCRIPT_AUTHOR=IWAMURO/TAGUCHI
SCRIPT_UPDATE=1999.04.02
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
</Default_Parameter>

<Command>
:START
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec VGW Ag_Auto_Select Motor=ON EQUINOX=2000.0 RA=!STATS.RA DEC=!STATS.DEC F_Select=CS Probe_RA=!STATS.RA Probe_DEC=!STATS.DEC AG\
_PA=0.0 Probe_R=0.0 Probe_THETA=000.0 Probe_X=0.0 Probe_Y=0.0 Select_Mode=MANUAL DSS_Mode=ON AG_Area=AG1 Instrument=OHS ;
:MAIN_START
Exec TSC TelDrive Motor=ON Coord=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=@STATUS Direction=TSC ;
:MAIN_END

:END
</Command>

```

TELOFFSET_AG.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CISCO
COMMAND=Teloffset_AG
SCRIPT_ID=TELOFFSET_AG.sk
SCRIPT_AUTHOR=IWAMURO
SCRIPT_UPDATE=1999.03.30
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DRA=0.0
DDEC=0.0
</Default_Parameter>

<Command>
:START

:MAIN_START
Exec TSC AG_TRACKING MOTOR=OFF CALC_REGION=1 ;
Exec OBS CONVSECRADec RASEC=$DRA DECSEC=$DDEC RABASE=!STATS.RA DECBASE=!STATS.DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe Motor=ON Coord=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=@STATUS F_Select=CS PMRA=000.0000 PMDEC=0\
00.0000 E=OFF ANAB=+0.000 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN Mode=CURRENT CALC_REGION=1 ;
Exec TSC AG_TRACKING CALC_REGION=1 MOTOR=ON ;
:MAIN_END

:END
</Command>

```

E.2.2 CS_BL128

GETOBJECT.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_BL128
COMMAND=GetObject
SCRIPT_ID=GETOBJECT.sk
SCRIPT_AUTHOR=IWAMURO
SCRIPT_UPDATE=1999.03.30
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
OBJECT="OBJECT"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
#dummy
NSAMPLE=NOP
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=BLOCK128 NFRAME=6 NSAMPLE=1 DATASET=$DATASE\
T_ID ;

:MAIN_START
Exec OHS HAWAII NFRAME=6 FRAMEID=&GET_F_NO[OHS A 6] INTEG=GO ;

:MAIN_END

:END
</Command>
```

GETSTANDARD.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_BL128
COMMAND=GetStandard
SCRIPT_ID=GETSTANDARD.sk
SCRIPT_AUTHOR=IWAMURO
SCRIPT_UPDATE=1999.03.30
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
OBJECT="STANDARD"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
#dummy
NSAMPLE=NOP
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=STANDARD_STAR PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=BLOCK128 NFRAME=6 NSAMPLE=1 DATASET=\
$DATASET_ID ;

:MAIN_START
Exec OHS HAWAII NFRAME=6 FRAMEID=&GET_F_NO[OHS A 6] INTEG=GO ;

:MAIN_END

:END
</Command>
```

E.2.3 CS_BL64

GETOBJECT.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_BL64
COMMAND=GetObject
SCRIPT_ID=GETOBJECT.sk
SCRIPT_AUTHOR=IWAMURO
SCRIPT_UPDATE=1999.03.30
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
OBJECT="OBJECT"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
#dummy
NSAMPLE=NOP
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=BLOCK64 NFRAME=6 NSAMPLE=1 DATASET=$DATASET\
_ID ;

:MAIN_START
Exec OHS HAWAII NFRAME=6 FRAMEID=&GET_F_NO[OHS A 6] INTEG=GO ;

:MAIN_END

:END
</Command>
```

GETSTANDARD.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_BL64
COMMAND=GetStandard
SCRIPT_ID=GETSTANDARD.sk
SCRIPT_AUTHOR=IWAMURO
SCRIPT_UPDATE=1999.03.30
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
OBJECT="STANDARD"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
#dummy
NSAMPLE=NOP
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=STANDARD_STAR PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=BLOCK64 NFRAME=6 NSAMPLE=1 DATASET=$\
DATASET_ID ;

:MAIN_START
Exec OHS HAWAII NFRAME=6 FRAMEID=&GET_F_NO[OHS A 6] INTEG=GO ;

:MAIN_END

:END
</Command>
```

E.2.4 CS_IMAGING

CHANGEAGPAR.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING
COMMAND=ChangeAGPar
SCRIPT_ID=CHANGEAGPAR.sk
DISPATCHER_VER=1.0
OBCP_VER=1.0
DATE=1999.04.02
AUTHOR=Iwamuro
</Header>

<Default_Parameter>
EXPOSURE=2000
I_BOTTOM=2800
</Default_Parameter>

<Command>
:START
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
Exec TSC AG_Readout=OFF ;

:MAIN_START
Exec TSC AG_Readout=ON D_TYPE=OBJ EXPOSURE=$EXPOSURE BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!VGWQ.AGG1.X1 Y1=!VGWQ.AGG1.Y1 X2=!VGWQ.AGG1.X2 Y2=!VGWQ.AGG1.Y2 I_\
SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Current Calc_Region=1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;

:MAIN_END

:END
</Command>
```

GETOBJECT.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING
COMMAND=GetObject
SCRIPT_ID=GETOBJECT.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="D50000"
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=1
FRAMEID=&GET_F_NO[OHS A 1]
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
} ,
{
Exec TSC AG_TRACKING MOTOR=OFF CALC_REGION=1 ;
Exec TSC InsRot Motor=ON TELESCOPE=LINK Coord=ABS POSITION=$INSROT F_Select=CS ,
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID INTEG=GO ;

:MAIN_END

:END
</Command>
```

GETOBJECTTHERE.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING
COMMAND=GetObject
SCRIPT_ID=GETOBJECT.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=1
FRAMEID=&GET_F_NO[OHS A 1]
</Default_Parameter>

<Command>
:START
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID INTEG=GO ;

:MAIN_END

:END
</Command>

```

GETOBJECT_AG.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING
COMMAND=GETOBJECT_AG
SCRIPT_ID=GETOBJECT_AG.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
RA_AG=!STATS.RA
DEC_AG=!STATS.DEC
EQUINOX_AG=2000.0
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=1
FRAMEID=&GET_F_NO[OHS A 1]
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
} ,
{
Exec TSC AG_TRACKING MOTOR=OFF CALC_REGION=1 ;
Exec TSC InsRot Motor=ON TELESCOPE=LINK Coord=ABS POSITION=$INSROT F_Select=CS ,
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=$RA_AG DEC=$DEC_AG EQUINOX=$EQUINOX_AG ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN Mode=Current CALC_REGION=1 ;
Exec TSC AG_TRACKING CALC_REGION=1 MOTOR=ON ;
Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;

```

```

#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID INTEG=GO ;

:MAIN_END
Exec TSC AG_TRACKING MOTOR=OFF ;

:END
</Command>

```

GETOBJECT_VGW.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING
COMMAND=GETOBJECT_VGW
SCRIPT_ID=GETOBJECT_VGW.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="D90000"
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=1
FRAMEID=&GET_F_NO[OHS A 1]
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
} ,
{
Exec TSC AG_TRACKING MOTOR=OFF CALC_REGION=1 ;
Exec TSC InsRot Motor=ON TELESCOPE=LINK Coord=ABS POSITION=$INSROT F_Select=CS ,
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN Mode=Current CALC_REGION=1 ;
Exec TSC AG_TRACKING CALC_REGION=1 MOTOR=ON ;
Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID INTEG=GO ;

:MAIN_END
Exec TSC AG_TRACKING MOTOR=OFF ;

:END
</Command>

```

GETSTANDARD.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING
COMMAND=GetStandard
SCRIPT_ID=GETSTANDARD.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="D90000"
OBJECT="STANDARD"

```

```

RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=1
FRAMEID=&GET_F_NO[OHS A 1]
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=STANDARD_STAR PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DAT\
ASET_ID ;
} ,
{
Exec TSC AG_TRACKING MOTOR=OFF CALC_REGION=1 ;
Exec TSC InsRot Motor=ON TELESCOPE=LINK Coord=ABS POSITION=$INSROT F_Select=CS ,
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID INTEG=GO ;

:MAIN_END

:END
</Command>

```

SETUPFIELD.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING
COMMAND=SetupField
SCRIPT_ID=SETUPFIELD.sk
DISPATCHER_VER=1.0
OBCP_VER=1.0
DATE=1999.03.15
AUTHOR=George
</Header>

<Default_Parameter>
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
INSROT=-90.0
</Default_Parameter>

<Command>
:START
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec TSC InsRot Motor=ON TELESCOPE=LINK Coord=ABS POSITION=$INSROT F_Select=CS ,
Exec TSC TelDrive Motor=ON Coord=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX Direction=TSC ,
#Exec TSC AGSH_Probe Motor=ON Coord=REST ;

:MAIN_START
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;

:MAIN_END

:END
</Command>

```

SETUPFIELD_AG.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING
COMMAND=SetupField_AG
SCRIPT_ID=SETUPFIELD_AG.sk
DISPATCHER_VER=1.0
OBCP_VER=1.0
DATE=1999.03.15
AUTHOR=George
</Header>

<Default_Parameter>
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
RA_AG=!STATS.RA
DEC_AG=!STATS.DEC
EQUINOX_AG=2000.0

```

```

EXPTIME_AG=VGWQ.AGE.EXPTIME
INSROT=-90.0
I_BOTTOM=2800
</Default_Parameter>

<Command>
:START

{
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
Exec TSC AG Readout=OFF ,
Exec TSC InsRot Motor=ON TELESCOPE=LINK Coord=ABS POSITION=$INSROT F_Select=CS ,
Exec TSC TelDrive Motor=ON Coord=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX Direction=TSC ,
} ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
Exec TSC AGSH_Probe Motor=ON Coord=ABS RA=$RA_AG DEC=$DEC_AG EQUINOX=$EQUINOX_AG F_Select=CS PMRA=000.0000 PMDEC=000.0000 E=OFF AN\
AB=+0.000 ;
#Exec TSC AG_Parts Motor=ON Shutter=OPEN ;

:MAIN_START
Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=3000 BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=32 Y1=32 X2=410 Y2=410 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG Readout=OFF ;
Exec VGW REGION_SelectION V_LAN_DATA=AG ;
Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=VGWQ.AGE.EXPTIME BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=VGWQ.AGE.X1 Y1=VGWQ.AGE.Y1 X2=VGWQ.AGE.X2 Y2=VGWQ.AGE.Y2 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec VGW AG_GUIDE_Area_SelectION Motor=ON ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=VGWQ.AGG1.X1 Y1=VGWQ.AGG1.Y1 X2=VGWQ.AGG1.X2 Y2=VGWQ.AGG1.Y2 I_\
SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Current Calc_Region=1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;

:MAIN_END

:END
</Command>

```

SETUPFIELD_VGW.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING
COMMAND=SetupField_VGW
SCRIPT_ID=SETUPFIELD_VGW.sk
DISPATCHER_VER=1.0
OBCP_VER=1.0
DATE=1999.03.15
AUTHOR=George
</Header>

<Default_Parameter>
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
AG_SELECT=MANUAL
INSROT=-90.0
I_BOTTOM=2800
</Default_Parameter>

<Command>
:START

{
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
Exec TSC AG Readout=OFF ,
Exec TSC InsRot Motor=ON TELESCOPE=LINK Coord=ABS POSITION=$INSROT F_Select=CS ,
Exec TSC TelDrive Motor=ON Coord=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX Direction=TSC ,
Exec VGW AG_Auto_Select Motor=ON EQUINOX=$EQUINOX RA=$RA DEC=$DEC F_Select=CS Probe_RA=$RA Probe_DEC=$DEC AG_PA=0.0 Probe_R=0.0 Pr\
obe_THETA=000.0 Probe_X=0.0 Probe_Y=0.0 Select_Mode=$AG_SELECT DSS_Mode=ON AG_Area=AG1 Instrument=OHS ,
} ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
Exec TSC AGSH_Probe Motor=ON Coord=ABS RA=VGWQ.AGP.ABS.RA DEC=VGWQ.AGP.ABS.DEC EQUINOX=$EQUINOX F_Select=CS PMRA=000.0000 PMDEC=\
000.0000 E=OFF ANAB=+0.000 ;
#Exec TSC AG_Parts Motor=ON Shutter=OPEN ;

:MAIN_START
Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=3000 BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=32 Y1=32 X2=410 Y2=410 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG Readout=OFF ;
Exec VGW REGION_SelectION V_LAN_DATA=AG ;
Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=VGWQ.AGE.EXPTIME BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=VGWQ.AGE.X1 Y1=VGWQ.AGE.Y1 X2=VGWQ.AGE.X2 Y2=VGWQ.AGE.Y2 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec VGW AG_GUIDE_Area_SelectION Motor=ON ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=VGWQ.AGG1.X1 Y1=VGWQ.AGG1.Y1 X2=VGWQ.AGG1.X2 Y2=VGWQ.AGG1.Y2 I_\
SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Current Calc_Region=1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;

:MAIN_END

```

:END
</Command>

E.2.5 CS_IMAGING4

GETOBJECT.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING4
COMMAND=GetObject
SCRIPT_ID=GETOBJECT.sk
SCRIPT_AUTHOR=IWAMURO/MOTOHARA/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
DITH=20.0
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
FRAMEID3=&GET_F_NO [OHS A 6]
FRAMEID4=&GET_F_NO [OHS A 6]
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
} ,
{
Exec TSC INSROT F_Select=CS TELESCOPE=LINK COORD=ABS POSITION=$INSROT ,
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
#POS1
Exec OBS CONVSECRADec RASEC=($DITH * 0.5) DECSEC=($DITH * 0.5) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;

#POS2
Exec OBS CONVSECRADec RASEC=($DITH * 0.0) DECSEC=($DITH * -1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;

#POS3
Exec OBS CONVSECRADec RASEC=($DITH * -1.0) DECSEC=($DITH * 0.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID3 INTEG=GO ;

#POS4
Exec OBS CONVSECRADec RASEC=($DITH * 0.0) DECSEC=($DITH * 1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID4 INTEG=GO ;

:MAIN_END
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;

:END
</Command>
```

GETOBJECT_AG.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING4
COMMAND=GetObject_AG
SCRIPT_ID=GETOBJECT_AG.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
DITH=20.0
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
```

```

RA_AG=NOP
DEC_AG=NOP
EQUINOX_AG=NOP
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO[OHS A 6]
FRAMEID2=&GET_F_NO[OHS A 6]
FRAMEID3=&GET_F_NO[OHS A 6]
FRAMEID4=&GET_F_NO[OHS A 6]
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATATYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
} ,
{
Exec TSC AG_TRACKING MOTOR=OFF CALC_REGION=1 ;
Exec TSC INSROT F_Select=CS TELESCOPE=LINK COORD=ABS POSITION=$INSROT ,
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
#POS1
Exec OBS CONVSECRADec RASEC=($DITH * 0.5) DECSEC=($DITH * 0.5) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=$RA_AG DEC=$DEC_AG EQUINOX=$EQUINOX_AG ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN Mode=Current CALC_REGION=1 ;
Exec TSC AG_TRACKING CALC_REGION=1 MOTOR=ON ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#POS2
Exec OBS CONVSECRADec RASEC=($DITH * 0.0) DECSEC=($DITH * -1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=$RA_AG DEC=$DEC_AG EQUINOX=$EQUINOX_AG ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN Mode=Current CALC_REGION=1 ;
Exec TSC AG_TRACKING CALC_REGION=1 MOTOR=ON ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#POS3
Exec OBS CONVSECRADec RASEC=($DITH * -1.0) DECSEC=($DITH * 0.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=$RA_AG DEC=$DEC_AG EQUINOX=$EQUINOX_AG ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN Mode=Current CALC_REGION=1 ;
Exec TSC AG_TRACKING CALC_REGION=1 MOTOR=ON ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID3 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#POS4
Exec OBS CONVSECRADec RASEC=($DITH * 0.0) DECSEC=($DITH * 1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=$RA_AG DEC=$DEC_AG EQUINOX=$EQUINOX_AG ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN Mode=Current CALC_REGION=1 ;
Exec TSC AG_TRACKING CALC_REGION=1 MOTOR=ON ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;

```

```

Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID4 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

:MAIN_END
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;

:END
</Command>

```

GETOBJECT_VGW.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING4
COMMAND=GetObject_VGW
SCRIPT_ID=GETOBJECT_VGW.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
DITH=20.0
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
FRAMEID3=&GET_F_NO [OHS A 6]
FRAMEID4=&GET_F_NO [OHS A 6]
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
} ,
{
Exec TSC AG_TRACKING MOTOR=OFF CALC_REGION=1 ;
Exec TSC INSROT F_Select=CS TELESCOPE=LINK COORD=ABS POSITION=$INSROT ,
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
#POS1
Exec OBS CONVSECRADec RASEC=($DITH * 0.5) DECSEC=($DITH * 0.5) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN Mode=Current CALC_REGION=1 ;
Exec TSC AG_TRACKING CALC_REGION=1 MOTOR=ON ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#POS2
Exec OBS CONVSECRADec RASEC=($DITH * 0.0) DECSEC=($DITH * -1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN Mode=Current CALC_REGION=1 ;
Exec TSC AG_TRACKING CALC_REGION=1 MOTOR=ON ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;

```

```

#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#POS3
Exec OBS CONVSECADEC RASEC=($DITH * -1.0) DECSEC=($DITH * 0.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN Mode=Current CALC_REGION=1 ;
Exec TSC AG_TRACKING CALC_REGION=1 MOTOR=ON ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID3 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#POS4
Exec OBS CONVSECADEC RASEC=($DITH * 0.0) DECSEC=($DITH * 1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN Mode=Current CALC_REGION=1 ;
Exec TSC AG_TRACKING CALC_REGION=1 MOTOR=ON ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID4 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

:MAIN_END
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;

:END
</Command>

```

GETSTANDARD.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING4
COMMAND=GetStandard
SCRIPT_ID=GETSTANDARD.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
DITH=20.0
OBJECT="STANDARD"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
FRAMEID3=&GET_F_NO [OHS A 6]
FRAMEID4=&GET_F_NO [OHS A 6]
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=STANDARD_STAR PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DAT\
ASET_ID ;
} ,
{
Exec TSC INSROT F_Select=CS TELESCOPE=LINK COORD=ABS POSITION=$INSROT ,
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
#POS1

```

```

Exec OBS CONVSECRADec RASEC=($DITH * 0.5) DECSEC=($DITH * 0.5) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;

#POS2
Exec OBS CONVSECRADec RASEC=($DITH * 0.0) DECSEC=($DITH * -1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;

#POS3
Exec OBS CONVSECRADec RASEC=($DITH * -1.0) DECSEC=($DITH * 0.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID3 INTEG=GO ;

#POS4
Exec OBS CONVSECRADec RASEC=($DITH * 0.0) DECSEC=($DITH * 1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID4 INTEG=GO ;

:MAIN_END
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;

:END
</Command>

```

E.2.6 CS_IMAGING4SKY4 GETOBJECT_VGW.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING4SKY4
COMMAND=GetObject_VGW
SCRIPT_ID=GETOBJECT_VGW.sk
SCRIPT_AUTHOR=IWAMURO
SCRIPT_UPDATE=1999.04.01
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="Ds0000"
DITH=20.0
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
FRAMEID3=&GET_F_NO [OHS A 6]
FRAMEID4=&GET_F_NO [OHS A 6]
FRAMEID5=&GET_F_NO [OHS A 6]
FRAMEID6=&GET_F_NO [OHS A 6]
FRAMEID7=&GET_F_NO [OHS A 6]
FRAMEID8=&GET_F_NO [OHS A 6]
DRA_SKY=180.0;
DDEC_SKY=180.0;
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
},
{
Exec TSC AG_TRACKING MOTOR=OFF ;
Exec TSC INSROT F_Select=CS TELESCOPE=LINK COORD=ABS POSITION=$INSROT ,
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
#POS1
Exec OBS CONVSECADEC RASEC=($DITH / 6.0) DECSEC=($DITH / 2.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN ;
Exec TSC AG_TRACKING ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#SKY1
Exec OBS CONVSECADEC RASEC=$DRA_SKY DECSEC=$DDEC_SKY RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;
Exec TSC TELDRIVE COORD=REL RA=(!STATOBS.RARELOUT * -1.0) DEC=(!STATOBS.DECRELOUT * -1.0) ;

#POS2
Exec OBS CONVSECADEC RASEC=($DITH * 0.0) DECSEC=($DITH * -1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN ;
Exec TSC AG_TRACKING ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID3 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#SKY2
Exec OBS CONVSECADEC RASEC=$DRA_SKY DECSEC=$DDEC_SKY RABASE=$RA DECBASE=$DEC ;

```

```

Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID4 INTEG=GO ;
Exec TSC TELDRIVE COORD=REL RA=(!STATOBS.RARELOUT * -1.0) DEC=(!STATOBS.DECRELOUT * -1.0) ;

#POS3
Exec OBS CONVSECRADec RASEC=($DITH / -1.5) DECSEC=($DITH / 1.5) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN ;
Exec TSC AG_TRACKING ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID5 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#SKY3
Exec OBS CONVSECRADec RASEC=$DRA_SKY DECSEC=$DDEC_SKY RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID6 INTEG=GO ;
Exec TSC TELDRIVE COORD=REL RA=(!STATOBS.RARELOUT * -1.0) DEC=(!STATOBS.DECRELOUT * -1.0) ;

#POS4
Exec OBS CONVSECRADec RASEC=($DITH * 1.0) DECSEC=($DITH * 0.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN ;
Exec TSC AG_TRACKING ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID7 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#SKY4
Exec OBS CONVSECRADec RASEC=$DRA_SKY DECSEC=$DDEC_SKY RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID8 INTEG=GO ;

:MAIN_END
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;

:END
</Command>

```

E.2.7 CS_IMAGING8

GETOBJECT.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING8
COMMAND=GetObject
SCRIPT_ID=GETOBJECT.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="Ds0000"
DITH=20.0
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
FRAMEID3=&GET_F_NO [OHS A 6]
FRAMEID4=&GET_F_NO [OHS A 6]
FRAMEID5=&GET_F_NO [OHS A 6]
FRAMEID6=&GET_F_NO [OHS A 6]
FRAMEID7=&GET_F_NO [OHS A 6]
FRAMEID8=&GET_F_NO [OHS A 6]
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
} ,
{
Exec TSC INSROT F_Select=CS TELESCOPE=LINK COORD=ABS POSITION=$INSROT ,
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
#POS1
Exec OBS CONVSECRADec RASEC=($DITH / 6.0) DECSEC=($DITH / 2.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;

#POS2
Exec OBS CONVSECRADec RASEC=($DITH * 0.0) DECSEC=($DITH * -1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;

#POS3
Exec OBS CONVSECRADec RASEC=($DITH * -2.0 / 3.0) DECSEC=($DITH * 2.0 / 3.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID3 INTEG=GO ;

#POS4
Exec OBS CONVSECRADec RASEC=($DITH * 1.0) DECSEC=($DITH * 0.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID4 INTEG=GO ;

#POS5
Exec OBS CONVSECRADec RASEC=($DITH * -2.0 / 3.0) DECSEC=($DITH * -2.0 / 3.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID5 INTEG=GO ;

#POS6
Exec OBS CONVSECRADec RASEC=($DITH * 0.0) DECSEC=($DITH * 1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID6 INTEG=GO ;

#POS7
Exec OBS CONVSECRADec RASEC=($DITH * 2.0 / 3.0) DECSEC=($DITH * -2.0 / 3.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID7 INTEG=GO ;

#POS8
Exec OBS CONVSECRADec RASEC=($DITH * -1.0) DECSEC=($DITH * 0.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID8 INTEG=GO ;

:MAIN_END
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;

:END
```

</Command>

GETOBJECT_AG.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING8
COMMAND=GetObject_AG
SCRIPT_ID=GETOBJECT_AG.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
DITH=20.0
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
RA_AG=NOP
DEC_AG=NOP
EQUINOX_AG=NOP
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=%GET_F_NO [OHS A 6]
FRAMEID2=%GET_F_NO [OHS A 6]
FRAMEID3=%GET_F_NO [OHS A 6]
FRAMEID4=%GET_F_NO [OHS A 6]
FRAMEID5=%GET_F_NO [OHS A 6]
FRAMEID6=%GET_F_NO [OHS A 6]
FRAMEID7=%GET_F_NO [OHS A 6]
FRAMEID8=%GET_F_NO [OHS A 6]
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=%FILTER ;
Exec OHS SLIT X=%SLITX ;
Exec OHS SLIT Y=%SLITY ;
Exec OHS HAWAII OBJECT=%OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=%EXPTIME EXPMODE=NORMAL NSAMPLE=%NSAMPLE DATASET=%DATASET_ID\
;
} ,
{
Exec TSC AG_TRACKING MOTOR=OFF ;
Exec TSC INSROT F_Select=CS TELESCOPE=LINK COORD=ABS POSITION=%INSROT ,
Exec TSC TELDRIVE RA=%RA DEC=%DEC EQUINOX=%EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
#POS1
Exec OBS CONVSECRADec RASEC=(%DITH / 6.0) DECSEC=(%DITH / 2.0) RABASE=%RA DECBASE=%DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=%RA_AG DEC=%DEC_AG EQUINOX=%EQUINOX_AG ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN ;
Exec TSC AG_TRACKING MOTOR=ON ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=%NFRAME FRAMEID=%FRAMEID1 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#POS2
Exec OBS CONVSECRADec RASEC=(%DITH * 0.0) DECSEC=(%DITH * -1.0) RABASE=%RA DECBASE=%DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=%RA_AG DEC=%DEC_AG EQUINOX=%EQ_AG ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN ;
Exec TSC AG_TRACKING MOTOR=ON ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
Exec OHS HAWAII NFRAME=%NFRAME FRAMEID=%FRAMEID2 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#POS3
```



```

Exec TSC AG_ORIGIN ;
Exec TSC AG_TRACKING MOTOR=ON ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID8 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

:MAIN_END
Exec TSC TELDRIVE RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;

:END
</Command>

```

GETOBJECT_VGW.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING8
COMMAND=GetObject_VGW
SCRIPT_ID=GETOBJECT_VGW.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
DITH=20.0
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
FRAMEID3=&GET_F_NO [OHS A 6]
FRAMEID4=&GET_F_NO [OHS A 6]
FRAMEID5=&GET_F_NO [OHS A 6]
FRAMEID6=&GET_F_NO [OHS A 6]
FRAMEID7=&GET_F_NO [OHS A 6]
FRAMEID8=&GET_F_NO [OHS A 6]
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
} ,
{
Exec TSC AG_TRACKING MOTOR=OFF ;
Exec TSC INSROT F_Select=CS TELESCOPE=LINK COORD=ABS POSITION=$INSROT ,
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
#POS1
Exec OBS CONVSECRADec RASEC=($DITH / 6.0) DECSEC=($DITH / 2.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN ;
Exec TSC AG_TRACKING ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#POS2
Exec OBS CONVSECRADec RASEC=($DITH * 0.0) DECSEC=($DITH * -1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;

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Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID7 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

#POS8
Exec OBS CONVSECADEC RASEC=($DITH * -1.0) DECSEC=($DITH * 0.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AGSH_Probe F_Select=CS COORD=ABS RA=!VGWQ.AGP.ABS.RA DEC=!VGWQ.AGP.ABS.DEC EQUINOX=2000.0 ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_ORIGIN ;
Exec TSC AG_TRACKING ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -300.0 +300.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -200.0 +200.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Timeout=0060 N1=[AG.AG1DX -150.0 +150.0] N2=[AG.AG1DY -150.0 +150.0] ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID8 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

:MAIN_END
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;

:END
</Command>

```

GETSTANDARD.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_IMAGING8
COMMAND=GetStandard
SCRIPT_ID=GETSTANDARD.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
DITH=20.0
OBJECT="STANDARD"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
INSROT=-90.0
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
FRAMEID3=&GET_F_NO [OHS A 6]
FRAMEID4=&GET_F_NO [OHS A 6]
FRAMEID5=&GET_F_NO [OHS A 6]
FRAMEID6=&GET_F_NO [OHS A 6]
FRAMEID7=&GET_F_NO [OHS A 6]
FRAMEID8=&GET_F_NO [OHS A 6]
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=STANDARD_STAR PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DAT\
ASET_ID ;
} ,
{
Exec TSC INSROT F_Select=CS TELESCOPE=LINK COORD=ABS POSITION=$INSROT ,
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDF -0.005 +0.005] ;
#POS1
Exec OBS CONVSECADEC RASEC=($DITH / 6.0) DECSEC=($DITH / 2.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;

#POS2
Exec OBS CONVSECADEC RASEC=($DITH * 0.0) DECSEC=($DITH * -1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;

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#POS3
Exec OBS CONVSECRADec RASEC=($DITH * -2.0 / 3.0) DECSEC=($DITH * 2.0 / 3.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID3 INTEG=GO ;

#POS4
Exec OBS CONVSECRADec RASEC=($DITH * 1.0) DECSEC=($DITH * 0.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID4 INTEG=GO ;

#POS5
Exec OBS CONVSECRADec RASEC=($DITH * -2.0 / 3.0) DECSEC=($DITH * -2.0 / 3.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID5 INTEG=GO ;

#POS6
Exec OBS CONVSECRADec RASEC=($DITH * 0.0) DECSEC=($DITH * 1.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID6 INTEG=GO ;

#POS7
Exec OBS CONVSECRADec RASEC=($DITH * 2.0 / 3.0) DECSEC=($DITH * -2.0 / 3.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID7 INTEG=GO ;

#POS8
Exec OBS CONVSECRADec RASEC=($DITH * -1.0) DECSEC=($DITH * 0.0) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID8 INTEG=GO ;

:MAIN_END
Exec TSC TELDRIVE COORD=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX ;

:END
</Command>

```

E.2.8 CS_SNG

GETOBJECT.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_SNG
COMMAND=GetObject
SCRIPT_ID=GETOBJECT.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="Ds0000"
SCAN=1.0
DITH=8.0
OBJECT="OBJECT"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
FRAMEID3=&GET_F_NO [OHS A 6]
FRAMEID4=&GET_F_NO [OHS A 6]
FRAMEID5=&GET_F_NO [OHS A 6]
FRAMEID6=&GET_F_NO [OHS A 6]
FRAMEID7=&GET_F_NO [OHS A 6]
FRAMEID8=&GET_F_NO [OHS A 6]
I_BOTTOM=2800
#dummy
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
} ,
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;

:MAIN_START
#POS1
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;

#POS2
Exec OBS CONVSECRAD SEC=($SCAN * 3.0) DECSEC=($DITH / 3.0) RABASE=!STATS.RA DECBASE=!STATS.DEC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=($SCAN * 3.0) DEC_REL=($DITH / 3.0) AZ=@STATUS EL=@STATUS ROTATOR=@STATUS PROBE=@STATUS \
ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RAREL DEC=!STATOBS.DECREL ;

Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;

#POS3
Exec OBS CONVSECRAD SEC=($SCAN * -1.0) DECSEC=($DITH / -6.0) RABASE=!STATS.RA DECBASE=!STATS.DEC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=($SCAN * -1.0) DEC_REL=($DITH / -6.0) AZ=@STATUS EL=@STATUS ROTATOR=@STATUS PROBE=@STATUS \
S ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RAREL DEC=!STATOBS.DECREL ;

Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID3 INTEG=GO ;
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;

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Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID7 INTEG=GO ;

:MAIN_END

:END
</Command>

```

GETSTANDARD.sk

```

<Header>
OBE_ID=OHS
OBE_Mode=CS_SPECTROSCOPY2
COMMAND=GetStandard
SCRIPT_ID=GETSTANDARD.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="Ds0000"
DITH=10.0
OBJECT="STANDARD"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
I_BOTTOM=2800
#dummy
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=STANDARD_STAR PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DAT\
ASET_ID ;
} ,
{
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS1
Exec OBS CONVSECRADec RASEC=0.0 DECSEC=($DITH / 2.0) RABASE=!STATS.RA DECBASE=!STATS.DEC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=0.0 DEC_REL=($DITH / 2.0) AZ=@STATUS EL=@STATUS ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@
STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON Calc_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;

Exec TSC AG_TRACKING MOTOR=OFF ;
#POS2
Exec OBS CONVSECRADec RASEC=0.0 DECSEC=(-1.0 * $DITH) RABASE=!STATS.RA DECBASE=!STATS.DEC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=0.0 DEC_REL=(-1.0 * $DITH) AZ=@STATUS EL=@STATUS ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X\
1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON Calc_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;

#POS0
Exec OBS CONVSECRADec RASEC=0.0 DECSEC=($DITH / 2.0) RABASE=!STATS.RA DECBASE=!STATS.DEC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=0.0 DEC_REL=($DITH / 2.0) AZ=@STATUS EL=@STATUS ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@
STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CENTROID_Y2=@STATUS ;

```

```

Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;

Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWCENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG-Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;

:MAIN_END

:END
</Command>

```

E.2.9 CS_SPECTROSCOPY

GETOBJECT.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_SPECTROSCOPY
COMMAND=GetObject
SCRIPT_ID=GETOBJECT.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
OBJECT="OBJECT"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=1
FRAMEID=&GET_F_NO[OHS A 1]
#dummy
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID INTEG=GO ;

:MAIN_END

:END
</Command>
```

GETSTANDARD.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_SPECTROSCOPY
COMMAND=GetStandard
SCRIPT_ID=GETSTANDARD.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.03.15
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
OBJECT="STANDARD"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=1
FRAMEID=&GET_F_NO[OHS A 1]
#dummy
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=STANDARD_STAR PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DAT\
ASET_ID ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID INTEG=GO ;

:MAIN_END

:END
</Command>
```

SETUPFIELD.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_SPECTROSCOPY
COMMAND=SetupField
SCRIPT_ID=SETUPFIELD.sk
DISPATCHER_VER=1.0
OBCP_VER=1.0
DATE=1999.03.15
AUTHOR=George
</Header>

<Default_Parameter>
DATASET_ID="DS0 000"
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000
AG_SELECT=MANUAL
INSROT=-90
EXPTIME=nop
SLITX=nop
SLITY=nop
SLITXOPEN=100
FILTER=nop
NSAMPLE=NOP
NFRAME=1
FRAMEID0=&Get_F_NO [OHS A]
FRAMEID1=&Get_F_NO [OHS A]
FRAMEID2=&Get_F_NO [OHS A]
FRAMEID3=&Get_F_NO [OHS Q]
FRAMEID4=&Get_F_NO [OHS Q]
I_BOTTOM=2800
SKY_POS=i5
</Default_Parameter>

<Command>
:START

{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITXOPEN ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII EXPTIME=$EXPTIME OBJECT=$OBJECT DATTYPE=TEST DATASET=$DATASET_ID NSAMPLE=$NSAMPLE ;
} ,
{
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
Exec TSC AG Readout=OFF ;
Exec TSC InsRot Motor=ON TELESCOPE=LINK Coord=ABS POSITION=$INSROT F_Select=CS ,
Exec TSC TelDrive Motor=ON Coord=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX Direction=TSC ,
Exec VGW Ag_Auto_Select Motor=ON EQUINOX=$EQUINOX RA=$RA DEC=$DEC F_Select=CS Probe_RA=$RA Probe_DEC=$DEC AG_PA=0.0 Probe_R=0.0 Pr\
obe_THETA=000.0 Probe_X=0.0 Probe_Y=0.0 Select_Mode=$AG_SELECT DSS_Mode=ON AG_Area=AG1 Instrument=OHS ,
} ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
Exec TSC AGSH_Probe Motor=ON Coord=ABS RA=$VGWQ.AGP.ABS.RA DEC=$VGWQ.AGP.ABS.DEC EQUINOX=$EQUINOX F_Select=CS PMRA=000.0000 PMDEC=\
000.0000 E=OFF ANAB=+0.000 ;
#Exec TSC AG_Parts Motor=ON Shutter=OPEN ;

Exec OBS ConvSecRADEC RASEC=0.0 DECSEC=$SKY_POS RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID0 INTEG=GO ;
{
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=BIAS Exec_Flag=off ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=DARK Exec_Flag=off ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=FLAT Exec_Flag=off ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=off ;
Exec OBC Calib_File Readout=on Instrument_name=OHS TYPE=SKY input_frame=$FRAMEID0 ;
} ,

Exec TSC TelDrive Motor=ON Coord=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX Direction=TSC ;
Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=3000 BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=32 Y1=32 X2=410 Y2=410 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG Readout=OFF ;
Exec VGW REGION_Selection V_LAN_DATA=AG ;
Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=$VGWQ.AGE.EXPTIME BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=$VGWQ.AGE.X1 Y1=$\
VGWQ.AGE.Y1 X2=$VGWQ.AGE.X2 Y2=$VGWQ.AGE.Y2 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec VGW AG_GUIDE_Area_Selection Motor=ON ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=$VGWQ.AGG1.X1 Y1=$VGWQ.AGG1.Y1 X2=$VGWQ.AGG1.X2 Y2=$VGWQ.AGG1.Y2 I_\
SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Current Calc_Region=1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;

Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;

Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=on ;
Exec OBC Pipeline_Readout=on Instrument_name=OHS input_frame=$FRAMEID1 output_frame=$FRAMEID3 ,
Exec OHS SLIT X=$SLITX ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;

```

```

Exec OBC Pipeline Readout=on Instrument_name=OHS input_frame=$FRAMEID2 output_frame=$FRAMEID4 ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=off ;

Exec OBC DIRECT_TELESCOPE_MOVE motor=on instrument_name=OHS input_frame=[$FRAMEID3 $FRAMEID4] ;

Exec TSC AG_TRACKING MOTOR=OFF CALC_REGION=1 ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
Exec OBS ConvSecRADEC RASEC=(!OBCQ.OHS.PIXDIF.X * 0.115) DECSEC=(!OBCQ.OHS.PIXDIF.Y * -0.115) RABASE=$RA DECBASE=$DEC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(!OBCQ.OHS.PIXDIF.X * 0.115) DEC_REL=(!OBCQ.OHS.PIXDIF.Y * -0.115) AZ=@STATUS EL=@STATUS \
ROTATOR=@STATUS PROBT=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CEN\
TROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;

Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

:MAIN_END

:END
</Command>

```

SETUPFIELD_AG.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_SPECTROSCOPY
COMMAND=SetupField_AG
SCRIPT_ID=SETUPFIELD_AG.sk
DISPATCHER_VER=1.0
OBCP_VER=1.0
DATE=1999.03.15
AUTHOR=George
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
RA_AG=!STATS.RA
DEC_AG=!STATS.DEC
EQUINOX_AG=2000.0
EXPTIME_AG=!VGWQ.AGE.EXPTIME
INSROT=-90.0
EXPTIME=nop
SLITX=nop
SLITY=nop
SLITXOPEN=100
FILTER=nop
NSAMPLE=NOP
NFRAME=1
FRAMEID0=&Get_F_NO [OHS A]
FRAMEID1=&Get_F_NO [OHS A]
FRAMEID2=&Get_F_NO [OHS A]
FRAMEID3=&Get_F_NO [OHS Q]
FRAMEID4=&Get_F_NO [OHS Q]
I_BOTTOM=2800
SKY_POS=15
</Default_Parameter>

<Command>
:START

{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITXOPEN ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII EXPTIME=$EXPTIME OBJECT=$OBJECT DATTY=TEST DATASET=$DATASET_ID NSAMPLE=$NSAMPLE ;
} ,
{
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
Exec TSC AG Readout=OFF ,
Exec TSC InsRot Motor=ON TELESCOPE=LINK Coord=ABS POSITION=$INSROT F_Select=CS ,
Exec TSC TelDrive Motor=ON Coord=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX Direction=TSC ,
} ;
Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
Exec TSC AGSH_Probe Motor=ON Coord=ABS RA=$RA_AG DEC=$DEC_AG EQUINOX=$EQUINOX_AG F_Select=CS PMRA=000.0000 PMDEC=000.0000 E=OFF AN\
AB=+0.000 ;
#Exec TSC AG_Parts Motor=ON Shutter=OPEN ;

Exec OBS ConvSecRADEC RASEC=0.0 DECSEC=$SKY_POS RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID0 INTEG=GO ;

```

```

{
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=BIAS Exec_Flag=off ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=DARK Exec_Flag=off ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=FLAT Exec_Flag=off ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=off ;
Exec OBC Calib_File Readout=on Instrument_name=OHS TYPE=SKY input_frame=$FRAMEID0 ;
} ,

Exec TSC TelDrive Motor=ON Coord=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX Direction=TSC ;
Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=3000 BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=32 Y1=32 X2=410 Y2=410 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG Readout=OFF ;
Exec VGW REGION_Selection V_LAN_DATA=AG ;
Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=$EXPTIME_AG BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=!VGWQ.AGE.X1 Y1=!VGWQ.AGE.Y1 X2=!VGWQ.AGE.X2 Y2=!VGWQ.AGE.Y2 ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec VGW AG_GUIDE_Area_Selection Motor=ON ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!VGWQ.AGG1.X1 Y1=!VGWQ.AGG1.Y1 X2=!VGWQ.AGG1.X2 Y2=!VGWQ.AGG1.Y2 I_\\SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Current Calc_Region=1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;

Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;

Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=on ;
Exec OBC Pipeline Readout=on Instrument_name=OHS input_frame=$FRAMEID1 output_frame=$FRAMEID3 ,
Exec OHS SLIT X=$SLITX ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;

Exec OBC Pipeline Readout=on Instrument_name=OHS input_frame=$FRAMEID2 output_frame=$FRAMEID4 ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=off ;

Exec OBC DIRECT_TELESCOPE_MOVE motor=on instrument_name=OHS input_frame=[$FRAMEID3 $FRAMEID4] ;

Exec TSC AG_TRACKING MOTOR=OFF CALC_REGION=1 ;
Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
Exec OBS ConvSecRADEC RASEC=(!OBCQ.OHS.PIXDIF.X * 0.115) DECSEC=(!OBCQ.OHS.PIXDIF.Y * -0.115) RABASE=$RA DECBASE=$DEC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(!OBCQ.OHS.PIXDIF.X * 0.115) DEC_REL=(!OBCQ.OHS.PIXDIF.Y * -0.115) AZ=@STATUS EL=@STATUS \\ROTATOR=@STATUS PROBT=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CEN\\TROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;

Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWCENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

:MAIN_END

:END
</Command>

```

SETUPFIELD_VGW.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_SPECTROSCOPY
COMMAND=SetupField_VGW
SCRIPT_ID=SETUPFIELD_VGW.sk
DISPATCHER_VER=1.0
OBCP_VER=1.0
DATE=1999.03.15
AUTHOR=George
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
OBJECT="OBJECT"
RA=!STATS.RA
DEC=!STATS.DEC
EQUINOX=2000.0
AG_SELECT=MANUAL
INSROT=-90.0
EXPTIME=nop
SLITX=nop
SLITY=nop
SLITXOPEN=100
FILTER=nop
NSAMPLE=NOP
NFRAME=1
FRAMEID0=&Get_F_NO [OHS A]
FRAMEID1=&Get_F_NO [OHS A]

```

```

FRAMEID2=&Get_F_NO [OHS A]
FRAMEID3=&Get_F_NO [OHS Q]
FRAMEID4=&Get_F_NO [OHS Q]
I_BOTTOM=2800
SKY_POS=15
</Default_Parameter>

<Command>
:START

{
  Exec OHS FILTER SELECT=$FILTER ;
  Exec OHS SLIT X=$SLITXOPEN ;
  Exec OHS SLIT Y=$SLITY ;
  Exec OHS HAWAII EXPTIME=$EXPTIME OBJECT=$OBJECT DATATYPE=TEST DATASET=$DATASET_ID NSAMPLE=$NSAMPLE ;
} ,
{
  Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
  Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
  Exec TSC AG Readout=OFF ,
  Exec TSC InsRot Motor=ON TELESCOPE=LINK Coord=ABS POSITION=$INSROT F_Select=CS ,
  Exec TSC TelDrive Motor=ON Coord=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX Direction=TSC ,
  Exec VGW Ag_Auto_Select Motor=ON EQUINOX=$EQUINOX RA=$RA DEC=$DEC F_Select=CS Probe_RA=$RA Probe_DEC=$DEC AG_PA=0.0 Probe_R=0.0 Probe_THETA=000.0 Probe_X=0.0 Probe_Y=0.0 Select_Mode=$AG_SELECT DSS_Mode=ON AG_Area=AG1 Instrument=OHS ,
} ;
  Exec OBS Check_Status Mode=AND Timeout=0180 N1=[STATS.ROTDIF -0.005 +0.005] ;
  Exec TSC AGSH_Probe Motor=ON Coord=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX F_Select=CS PMRA=000.0000 PMDEC=$PMDEC 000.0000 E=OFF ANAB=+0.000 ;
  #Exec TSC AG_Parts Motor=ON Shutter=OPEN ;

  Exec OBS ConvSecRADEC RASEC=0.0 DECSEC=$SKY_POS RABASE=$RA DECBASE=$DEC ;
  Exec TSC TELDRIVE COORD=REL RA=$RA DEC=$DEC EQUINOX=$EQUINOX F_Select=CS PMRA=000.0000 PMDEC=$PMDEC 000.0000 E=OFF ANAB=+0.000 ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID0 INTEG=GO ;
{
  Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=BIAS Exec_Flag=off ;
  Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=DARK Exec_Flag=off ;
  Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=FLAT Exec_Flag=off ;
  Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=off ;
  Exec OBC Calib_File Readout=on Instrument_name=OHS TYPE=SKY input_frame=$FRAMEID0 ;
} ,

  Exec TSC TelDrive Motor=ON Coord=ABS RA=$RA DEC=$DEC EQUINOX=$EQUINOX Direction=TSC ;
  Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=3000 BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=32 Y1=32 X2=410 Y2=410 ;
  Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  Exec TSC AG Readout=OFF ;
  Exec VGW REGION_SelectION V_LAN_DATA=AG ;
  Exec TSC AG Readout=ON D_TYPE=OBJ EXPOSURE=VGWQ.AGE.EXPTIME BINNING=11 CAL_SKY=OFF CAL_DARK=OFF CAL_FLAT=OFF X1=$X1 Y1=$Y1 X2=$X2 Y2=$Y2 ;
  Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  Exec VGW AG_GUIDE_Area_SelectION Motor=ON ;
  Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=$X1 Y1=$Y1 X2=$X2 Y2=$Y2 I=$I SEIL=65535 I_BOTTOM=$I_BOTTOM ;
  Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  Exec TSC AG_Origin Mode=Current Calc_Region=1 ;
  Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;

  Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
  Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
  Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

  Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;

  Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=on ;
  Exec OBC Pipeline_Readout=on Instrument_name=OHS input_frame=$FRAMEID1 output_frame=$FRAMEID3 ,
  Exec OHS SLIT X=$SLITX ;

  Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;

  Exec OBC Pipeline_Readout=on Instrument_name=OHS input_frame=$FRAMEID2 output_frame=$FRAMEID4 ;
  Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=off ;

  Exec OBC DIRECT_TELESCOPE_MOVE motor=on instrument_name=OHS input_frame=[$FRAMEID3 $FRAMEID4] ;

  Exec TSC AG_TRACKING MOTOR=OFF CALC_REGION=1 ;
  Exec TSC AG_Centroid Readout=OFF Calc_Region=1 ;
  Exec OBS ConvSecRADEC RASEC=(!OBCQ.OHS.PIXDIF.X * 0.115) DECSEC=(!OBCQ.OHS.PIXDIF.Y * -0.115) RABASE=$RA DECBASE=$DEC ;
  Exec OBS AG_GetOffset F_Select=CS RA_REL=(!OBCQ.OHS.PIXDIF.X * 0.115) DEC_REL=(!OBCQ.OHS.PIXDIF.Y * -0.115) AZ=@STATUS EL=@STATUS \
  ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CENTROID_Y2=@STATUS ;
  Exec TSC TELDRIVE COORD=REL RA=$RA DEC=$DEC EQUINOX=$EQUINOX F_Select=CS PMRA=000.0000 PMDEC=$PMDEC 000.0000 E=OFF ANAB=+0.000 ;

  Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=$X1 Y1=$Y1 X2=$X2 Y2=$Y2 I=$I SEIL=65535 I_BOTTOM=$I_BOTTOM ;
  Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  Exec TSC AG_Origin Mode=Any Calc_Region=1 X=$X1 Y=$Y1 X2=$X2 Y2=$Y2 I=$I SEIL=65535 I_BOTTOM=$I_BOTTOM ;
  Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
  Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
  Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
  Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

:MAIN_END

:END

```

</Command>

SETUPSPEC.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_SPECTROSCOPY
COMMAND=SetupSpec
SCRIPT_ID=SETUPSPEC.sk
DISPATCHER_VER=1.0
OBCP_VER=1.0
DATE=1999.06.18
AUTHOR=George/Iwamuro/TAGUCHI
</Header>

<Default_Parameter>
DATASET_ID="D90000"
OBJECT="FIELDCHECK"
EXPTIME=NOP
FILTER=NOP
SLITX=5
SLITY=NOP
NSAMPLE=NOP
NFRAME=1
FRAMEID1=&Get_F_NO [OHS A]
FRAMEID2=&Get_F_NO [OHS A]
FRAMEID3=&Get_F_NO [OHS Q]
FRAMEID4=&Get_F_NO [OHS Q]
DX=0.0
DY=50.0
PA=(-90.0 - !TSCL.INSROTPA )
</Default_Parameter>

<Command>
:START

Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATATYPE=TEST PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID ;\

Exec OBS CALC SIN_ARG=$PA COS_ARG=$PA TAN_ARG=$PA ;

:MAIN_START
Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec OBS CONVSECRADec RASEC=(0.116 * !STATOBS.COS * $DX - 0.116 * !STATOBS.SIN * $DY ) DECSEC=(-0.116 * !STATOBS.SIN * $DX - 0.116\
* !STATOBS.COS * $DY ) RABASE=!STATS.RA DECBASE=!STATS.DEC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.116 * !STATOBS.COS * $DX - 0.116 * !STATOBS.SIN * $DY ) DEC_REL=(-0.116 * !STATOBS.SIN\
* $DX - 0.116 * !STATOBS.COS * $DY ) AZ=@STATUS EL=@STATUS ROTATOR=@STATUS PROBE=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CEN\
TROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RAREL DEC=!STATOBS.DECREL ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=@STATUS ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;
{
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=BIAS Exec_Flag=off ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=DARK Exec_Flag=off ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=FLAT Exec_Flag=off ;
Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=off ;
Exec OBC Calib_File Readout=on Instrument_name=OHS TYPE=SKY input_frame=$FRAMEID1 ;
} ,

Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec OBS CONVSECRADec RASEC=(-0.116 * !STATOBS.COS * $DX + 0.116 * !STATOBS.SIN * $DY ) DECSEC=(0.116 * !STATOBS.SIN * $DX + 0.116\
* !STATOBS.COS * $DY ) RABASE=!STATS.RA DECBASE=!STATS.DEC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(-0.116 * !STATOBS.COS * $DX + 0.116 * !STATOBS.SIN * $DY ) DEC_REL=(0.116 * !STATOBS.SIN\
* $DX + 0.116 * !STATOBS.COS * $DY ) AZ=@STATUS EL=@STATUS ROTATOR=@STATUS PROBE=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CEN\
TROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RAREL DEC=!STATOBS.DECREL ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=@STATUS ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;

Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=on ;
Exec OBC Pipeline_Readout=on Instrument_name=OHS input_frame=$FRAMEID2 output_frame=$FRAMEID3 ;

Exec OBC Pipeline_Parameter_Exec_Flag Motor=on Instrument_name=OHS TYPE=SKY Exec_Flag=off ;
Exec OBC Pipeline_Readout=on Instrument_name=OHS input_frame=$FRAMEID2 output_frame=$FRAMEID4 ;

Exec OBC DIRECT_TELESCOPE_MOVE motor=on instrument_name=OHS input_frame=[$FRAMEID3 $FRAMEID4] ;

Exec TSC AG_Tracking Motor=OFF Calc_Region=1 ;
Exec OBS CONVSECRADec RASEC=(0.116 * !STATOBS.COS * !OBCQ.OHS.PIXDIF.X - 0.116 * !STATOBS.SIN * !OBCQ.OHS.PIXDIF.Y ) DECSEC=(-0.11\
6 * !STATOBS.SIN * !OBCQ.OHS.PIXDIF.X - 0.116 * !STATOBS.COS * !OBCQ.OHS.PIXDIF.Y ) RABASE=!STATS.RA DECBASE=!STATS.DEC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.116 * !STATOBS.COS * !OBCQ.OHS.PIXDIF.X - 0.116 * !STATOBS.SIN * !OBCQ.OHS.PIXDIF.Y ) \
DEC_REL=(-0.116 * !STATOBS.SIN * !OBCQ.OHS.PIXDIF.X - 0.116 * !STATOBS.COS * !OBCQ.OHS.PIXDIF.Y ) AZ=@STATUS EL=@STATUS ROTATOR=@S\
TATUS PROBE=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CENTROID_Y2=@\
STATUS ;
```

```

Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWCENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=0STATUS ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;

:MAIN_END

:END
</Command>

```

E.2.10 CS_SPECTROSCOPY2

GETOBJECT.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_SPECTROSCOPY2
COMMAND=GetObject
SCRIPT_ID=GETOBJECT.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.05.28
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="Ds0000"
DITH=10.0
PA=(-90.0 - !TSC.LINSROTPA )
OBJECT="OBJECT"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO[OHS A 6]
FRAMEID2=&GET_F_NO[OHS A 6]
I_BOTTOM=2800
#dummy
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
Exec OBS CALC SIN_ARG=$PA COS_ARG=$PA TAN_ARG=$PA ;
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
},
{
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS1
Exec OBS CONVSECRADec RASEC=(0.5 * $DITH * !STATOBS.SIN ) DECSEC=(0.5 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.5 * $DITH * !STATOBS.SIN ) DEC_REL=(0.5 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBT=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS2
Exec OBS CONVSECRADec RASEC=(-1.0 * $DITH * !STATOBS.SIN ) DECSEC=(-1.0 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.D\
EC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(-1.0 * $DITH * !STATOBS.SIN ) DEC_REL=(-1.0 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STAT\
US ROTATOR=@STATUS PROBT=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS \
CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS0
Exec OBS CONVSECRADec RASEC=(0.5 * $DITH * !STATOBS.SIN ) DECSEC=(0.5 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.5 * $DITH * !STATOBS.SIN ) DEC_REL=(0.5 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBT=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
```

```

Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
:MAIN_END

:END
</Command>

```

GETSTANDARD.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_SPECTROSCOPY2
COMMAND=GetStandard
SCRIPT_ID=GETSTANDARD.sk
SCRIPT_AUTHOR=MOTOHARA/IWAMURO/George
SCRIPT_UPDATE=1999.05.28
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
DITH=10.0
PA=(-90.0 - !TSC.INSROTPA )
OBJECT="STANDARD"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO[OHS A 6]
FRAMEID2=&GET_F_NO[OHS A 6]
I_BOTTOM=2800
#dummy
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
Exec OBS CALC SIN_ARG=$PA COS_ARG=$PA TAN_ARG=$PA ;
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=STANDARD_STAR PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DAT\
ASET_ID ;
} ,
{
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS1
Exec OBS CONVSECRADec RASEC=(0.5 * $DITH * !STATOBS.SIN ) DECSEC=(0.5 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.5 * $DITH * !STATOBS.SIN ) DEC_REL=(0.5 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBE=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS2
Exec OBS CONVSECRADec RASEC=(-1.0 * $DITH * !STATOBS.SIN ) DECSEC=(-1.0 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.D\
EC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(-1.0 * $DITH * !STATOBS.SIN ) DEC_REL=(-1.0 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STAT\
US ROTATOR=@STATUS PROBE=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS \
CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS0
Exec OBS CONVSECRADec RASEC=(0.5 * $DITH * !STATOBS.SIN ) DECSEC=(0.5 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\

```

```

;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.5 * $DITH * !STATOBS.SIN ) DEC_REL=(0.5 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
:MAIN_END

:END
</Command>

```

E.2.11 CS_SPECTROSCOPY2SKY2

GETOBJECT.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_SPECTROSCOPY2SKY2
COMMAND=GetObject
SCRIPT_ID=GETOBJECT.sk
SCRIPT_AUTHOR=IWAMURO
SCRIPT_UPDATE=1999.06.08
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="Ds0000"
DITH=10.0
PA=(-90.0 - !TSC.LNSROTPA )
OBJECT="OBJECT"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
FRAMEID3=&GET_F_NO [OHS A 6]
FRAMEID4=&GET_F_NO [OHS A 6]
I_BOTTOM=2800
DRA_SKY=180.0;
DDEC_SKY=180.0;
#dummy
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
Exec OBS CALC SIN_ARG=$PA COS_ARG=$PA TAN_ARG=$PA ;
{
  Exec OHS FILTER SELECT=$FILTER ;
  Exec OHS SLIT X=$SLITX ;
  Exec OHS SLIT Y=$SLITY ;
  Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
},
{
  Exec TSC AG_TRACKING MOTOR=OFF ;
  #POS1
  Exec OBS CONVSECRADec RASEC=(0.5 * $DITH * !STATOBS.SIN ) DECSEC=(0.5 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
  Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.5 * $DITH * !STATOBS.SIN ) DEC_REL=(0.5 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBT=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
  Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
  Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
  Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
  Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
  #Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
  #Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  #Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
  #Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  #Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#SKY1
Exec OBS CONVSECRADec RASEC=($DRA_SKY + $DITH * 0.5 ) DECSEC=($DDEC_SKY + $DITH * 0.5 ) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;
Exec TSC TELDRIVE COORD=REL RA=(!STATOBS.RARELOUT * -1.0) DEC=(!STATOBS.DECRELOUT * -1.0) ;
#POS2
Exec OBS CONVSECRADec RASEC=(-1.0 * $DITH * !STATOBS.SIN ) DECSEC=(-1.0 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.D\
EC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(-1.0 * $DITH * !STATOBS.SIN ) DEC_REL=(-1.0 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STAT\
US ROTATOR=@STATUS PROBT=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS \
CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID3 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;

```

```

#SKY2
Exec OBS CONVSECRADec RASEC=( $DRA_SKY - $DITH * 0.5 ) DECSEC=( $DDEC_SKY - $DITH * 0.5 ) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OBS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID4 INTEG=G0 ;
Exec TSC TELDRIVE COORD=REL RA=(!STATOBS.RARELOUT * -1.0) DEC=(!STATOBS.DECRELOUT * -1.0) ;
#POS0
Exec OBS CONVSECRADec RASEC=(0.5 * $DITH * !STATOBS.SIN ) DECSEC=(0.5 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.5 * $DITH * !STATOBS.SIN ) DEC_REL=(0.5 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBE=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON Calc_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
:MAIN_END

:END
</Command>

```

E.2.12 CS_SPECTROSCOPY4

GETOBJECT.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_SPECTROSCOPY4
COMMAND=GetObject
SCRIPT_ID=GETOBJECT.sk
SCRIPT_AUTHOR=MOTOHARA, IWAMURO
SCRIPT_UPDATE=1999.05.28
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="Ds0000"
DITH=10.0
PA=(-90.0 - !TCL.INSROTPA )
OBJECT="OBJECT"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
FRAMEID3=&GET_F_NO [OHS A 6]
FRAMEID4=&GET_F_NO [OHS A 6]
I_BOTTOM=2800
#dummy
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
Exec OBS CALC SIN_ARG=$PA COS_ARG=$PA TAN_ARG=$PA ;
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
;
} ,
{
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS1
Exec OBS CONVSECRADec RASEC=(0.6 * $DITH * !STATOBS.SIN ) DECSEC=(0.6 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.D\
;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.6 * $DITH * !STATOBS.SIN ) DEC_REL=(0.6 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS2
Exec OBS CONVSECRADec RASEC=(-1.0 * $DITH * !STATOBS.SIN ) DECSEC=(-1.0 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.D\
EC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(-1.0 * $DITH * !STATOBS.SIN ) DEC_REL=(-1.0 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STAT\
US ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS \
CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS3
Exec OBS CONVSECRADec RASEC=(0.8 * $DITH * !STATOBS.SIN ) DECSEC=(0.8 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.8 * $DITH * !STATOBS.SIN ) DEC_REL=(0.8 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;

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Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWCENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID3 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS4
Exec OBS CONVSECRAD RASEC=(-1.0 * $DITH * !STATOBS.SIN ) DECSEC=(-1.0 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.D\
EC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(-1.0 * $DITH * !STATOBS.SIN ) DEC_REL=(-1.0 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STAT\
US ROTATOR=@STATUS PROBT=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS \
CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWCENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID4 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS0
Exec OBS CONVSECRAD RASEC=(0.6 * $DITH * !STATOBS.SIN ) DECSEC=(0.6 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.6 * $DITH * !STATOBS.SIN ) DEC_REL=(0.6 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBT=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWCENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
:MAIN_END

:END
</Command>

```

GETSTANDARD.sk

```

<Header>
OBE_ID=OHS
OBE_MODE=CS_SPECTROSCOPY4
COMMAND=GetStandard
SCRIPT_ID=GETSTANDARD.sk
SCRIPT_AUTHOR=MOTOHARA, IWAMURO
SCRIPT_UPDATE=1999.05.28
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="DS0000"
DITH=10.0
PA=(-90.0 - !TSCL.INSROTPA )
OBJECT="STANDARD"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
FRAMEID3=&GET_F_NO [OHS A 6]
FRAMEID4=&GET_F_NO [OHS A 6]
I_BOTTOM=2800
#dummy
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
Exec OBS CALC SIN_ARG=$PA COS_ARG=$PA TAN_ARG=$PA ;
{
Exec OHS FILTER SELECT=$FILTER ;
Exec OHS SLIT X=$SLITX ;
Exec OHS SLIT Y=$SLITY ;
Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=STANDARD_STAR PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DAT\
ASET_ID ;
} ,
{
Exec TSC AG_TRACKING MOTOR=OFF ;

```

```

#POS1
Exec OBS CONVSECRADec RASEC=(0.6 * $DITH * !STATOBS.SIN ) DECSEC=(0.6 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.6 * $DITH * !STATOBS.SIN ) DEC_REL=(0.6 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Cacl_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS2
Exec OBS CONVSECRADec RASEC=(-1.0 * $DITH * !STATOBS.SIN ) DECSEC=(-1.0 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.D\
EC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(-1.0 * $DITH * !STATOBS.SIN ) DEC_REL=(-1.0 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STAT\
US ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS \
CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Cacl_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS3
Exec OBS CONVSECRADec RASEC=(0.8 * $DITH * !STATOBS.SIN ) DECSEC=(0.8 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.8 * $DITH * !STATOBS.SIN ) DEC_REL=(0.8 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS \
CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Cacl_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID3 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS4
Exec OBS CONVSECRADec RASEC=(-1.0 * $DITH * !STATOBS.SIN ) DECSEC=(-1.0 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.D\
EC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(-1.0 * $DITH * !STATOBS.SIN ) DEC_REL=(-1.0 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STAT\
US ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS \
CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Cacl_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID4 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#POS0
Exec OBS CONVSECRADec RASEC=(0.6 * $DITH * !STATOBS.SIN ) DECSEC=(0.6 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.6 * $DITH * !STATOBS.SIN ) DEC_REL=(0.6 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBET=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Cacl_Region=1 ;
:MAIN_END

:END
</Command>

```

E.2.13 CS_SPECTROSCOPY4SKY4

GETOBJECT.sk

```
<Header>
OBE_ID=OHS
OBE_MODE=CS_SPECTROSCOPY4SKY4
COMMAND=GetObject
SCRIPT_ID=GETOBJECT.sk
SCRIPT_AUTHOR=IWAMURO
SCRIPT_UPDATE=1999.06.08
DISPATCHER_VERSION=1.0
</Header>

<Default_Parameter>
DATASET_ID="Ds0000"
DITH=10.0
PA=(-90.0 - !TCL.INSROTPA )
OBJECT="OBJECT"
EXPTIME=NOP
FILTER=NOP
SLITX=NOP
SLITY=NOP
NSAMPLE=NOP
NFRAME=6
FRAMEID1=&GET_F_NO [OHS A 6]
FRAMEID2=&GET_F_NO [OHS A 6]
FRAMEID3=&GET_F_NO [OHS A 6]
FRAMEID4=&GET_F_NO [OHS A 6]
FRAMEID5=&GET_F_NO [OHS A 6]
FRAMEID6=&GET_F_NO [OHS A 6]
FRAMEID7=&GET_F_NO [OHS A 6]
FRAMEID8=&GET_F_NO [OHS A 6]
I_BOTTOM=2800
DRA_SKY=180.0;
DECR_SKY=180.0;
#dummy
RA=NOP
DEC=NOP
EQUINOX=NOP
INSROT=NOP
</Default_Parameter>

<Command>
:START
Exec OBS CALC SIN_ARG=$PA COS_ARG=$PA TAN_ARG=$PA ;
{
  Exec OHS FILTER SELECT=$FILTER ;
  Exec OHS SLIT X=$SLITX ;
  Exec OHS SLIT Y=$SLITY ;
  Exec OHS HAWAII OBJECT=$OBJECT DATTYPE=OBJECT PREFIX="cisco." EXPTIME=$EXPTIME EXPMODE=NORMAL NSAMPLE=$NSAMPLE DATASET=$DATASET_ID\
} ,
{
  Exec TSC AG_TRACKING MOTOR=OFF ;
  #POS1
  Exec OBS CONVSECRADec RASEC=(0.6 * $DITH * !STATOBS.SIN ) DECSEC=(0.6 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
  Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.6 * $DITH * !STATOBS.SIN ) DEC_REL=(0.6 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBE=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
  Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
  Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
  Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
  Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
  #Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
  #Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  #Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
  #Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
  #Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;
} ;

:MAIN_START
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID1 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#SKY1
Exec OBS CONVSECRADec RASEC=($DRA_SKY + $DITH * 0.5 ) DECSEC=($DECR_SKY + $DITH * 0.5 ) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID2 INTEG=GO ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT * -1.0 DEC=!STATOBS.DECRELOUT * -1.0 ;
#POS2
Exec OBS CONVSECRADec RASEC=(-1.0 * $DITH * !STATOBS.SIN ) DECSEC=(-1.0 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.D\
EC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(-1.0 * $DITH * !STATOBS.SIN ) DEC_REL=(-1.0 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STAT\
US ROTATOR=@STATUS PROBE=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS \
CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
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#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID3 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#SKY2
Exec OBS CONVSECADEC RASEC=($DRA_SKY - $DITH * 0.5 ) DECSEC=($DDEC_SKY - $DITH * 0.5 ) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID4 INTEG=GO ;
Exec TSC TELDRIVE COORD=REL RA=(!STATOBS.RARELOUT * -1.0) DEC=(!STATOBS.DECRELOUT * -1.0) ;
#POS3
Exec OBS CONVSECADEC RASEC=(0.8 * $DITH * !STATOBS.SIN ) DECSEC=(0.8 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.8 * $DITH * !STATOBS.SIN ) DEC_REL=(0.8 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBE=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID5 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#SKY3
Exec OBS CONVSECADEC RASEC=($DRA_SKY + $DITH * 0.25 ) DECSEC=($DDEC_SKY + $DITH * 0.25 ) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID6 INTEG=GO ;
Exec TSC TELDRIVE COORD=REL RA=(!STATOBS.RARELOUT * -1.0) DEC=(!STATOBS.DECRELOUT * -1.0) ;
#POS4
Exec OBS CONVSECADEC RASEC=(-1.0 * $DITH * !STATOBS.SIN ) DECSEC=(-1.0 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.D\
EC ;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(-1.0 * $DITH * !STATOBS.SIN ) DEC_REL=(-1.0 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STAT\
US ROTATOR=@STATUS PROBE=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS \
CENTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
#Exec OBS Check_Status Mode=AND Timeout=0090 N1=[AG.AG1DX -500.0 +500.0] N2=[AG.AG1DY -300.0 +300.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -350.0 +350.0] N2=[AG.AG1DY -200.0 +200.0] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
#Exec OBS Check_Status Mode=AND Timeout=0060 N1=[AG.AG1DX -250.0 +250.0] N2=[AG.AG1DY -150.0 +150.0] ;

Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID7 INTEG=GO ;
Exec TSC AG_TRACKING MOTOR=OFF ;
#SKY4
Exec OBS CONVSECADEC RASEC=($DRA_SKY - $DITH * 0.25 ) DECSEC=($DDEC_SKY - $DITH * 0.25 ) RABASE=$RA DECBASE=$DEC ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec OHS HAWAII NFRAME=$NFRAME FRAMEID=$FRAMEID8 INTEG=GO ;
Exec TSC TELDRIVE COORD=REL RA=(!STATOBS.RARELOUT * -1.0) DEC=(!STATOBS.DECRELOUT * -1.0) ;
#POS0
Exec OBS CONVSECADEC RASEC=(0.6 * $DITH * !STATOBS.SIN ) DECSEC=(0.6 * $DITH * !STATOBS.COS ) RABASE=!STATS.RA DECBASE=!STATS.DEC\
;
Exec OBS AG_GetOffset F_Select=CS RA_REL=(0.6 * $DITH * !STATOBS.SIN ) DEC_REL=(0.6 * $DITH * !STATOBS.COS ) AZ=@STATUS EL=@STATUS\
ROTATOR=@STATUS PROBE=@STATUS ORIGIN_X1=@STATUS ORIGIN_Y1=@STATUS CENTROID_X1=@STATUS CENTROID_Y1=@STATUS CENTROID_X2=@STATUS CE\
NTROID_Y2=@STATUS ;
Exec TSC TELDRIVE COORD=REL RA=!STATOBS.RARELOUT DEC=!STATOBS.DECRELOUT ;
Exec TSC AG_Centroid Readout=ON CALC_Mode=CTR Calc_Region=1 X1=!STATOBS.NEWCENTROID_X1 Y1=!STATOBS.NEWCENTROID_Y1 X2=!STATOBS.NEWC\
ENTROID_X2 Y2=!STATOBS.NEWCENTROID_Y2 I_SEIL=65535 I_BOTTOM=$I_BOTTOM ;
Exec OBS Check_Status Mode=AND Timeout=0060 C1=[VGWD.DISP.AG NE !VGWD.DISP.AG] ;
Exec TSC AG_Origin Mode=Any Calc_Region=1 X=!STATOBS.NEWORIGIN_X1 Y=!STATOBS.NEWORIGIN_Y1 ;
Exec TSC AG_Tracking Motor=ON Calc_Region=1 ;
:MAIN_END

:END
</Command>

```