PRE-COSTAR
FOS APERTURE TRANSMISSIONS FOR POINT SOURCES
(update of CAL/FOS-106)

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ABSTRACT

The FOS absolute sensitivities are determined by observations of standard stars in the 4.3" acquisition aperture. For estimates of absolute fluxes of point sources that are observed in smaller apertures, the apparent, measured transmission of the smaller aperture relative to the 4.3" aperture is required. In addition to the proposals 3106 and 4211 that were analyzed for the earlier CAL/FOS-106 (Bohlin 1993), more recent data from propids 5046 and 5048 confirm the throughputs for the B3(1") and C2(slit) single apertures. Along with an early propid 2823, the 5046 and 5048 data also determine aperture corrections for some of the square aperture pairs C1(1"), A2(.5"), and A3(.25").

1. OBSERVATIONS

The same methodology is used as in CAL/FOS-106 (Bohlin 1993); and all of the analysis presented there remains valid. The newly analyzed data and the average aperture corrections that change slightly are discussed here.

In order to compute the relative aperture throughput, the countrate spectrum in the smaller apertures is divided by the countrate spectrum of the same star in the A1(4.3") aperture. All of the mean measured aperture corrections in Table 1 are derived from countrates that are corrected to the optimal (zero) OTA focus as described in CAL/FOS-106. The 53 new values along with the 75 earlier values provide the updated Table 1. The 53 new measures include 6 more through B3(1") to supplement the original 21, 13 more through the C2(slit) to supplement the original 18, and 34 for paired apertures.

2. DISCUSSION AND RECOMMENDATIONS

The recommended average aperture corrections are summarized in Table 2. The largest change in the averages from CAL/FOS-106 for the single apertures is a drop in the recommended average for the C2(slit) on the red side prism from 0.39 to 0.38. Changes in the quadratic fits for the single aperture corrections in Table 3 are less than 2-3%. Some of the uncertainties in Table 2 are less than quoted in CAL/FOS-106, because the new B3(1") and C2(slit) data demonstrate good repeatability.

For high dispersion, the small scatter in Table 1 suggests that an average of each column might lower the uncertainties further. An exception is H78, which is slightly low in all four cases. An alternative suggested by the new data for the C1(1") paired apertures is a smoothly dropping transmission with wavelength. The amount of this potential systematic effect is comparable to the uncertainty. In order to fully appreciate this uncertainty, a spectrum of interest could be reduced using the value for the particular grating in Table 1 and compared with the flux from the recommended average correction in Table 2. In the low dispersion modes, only a few of the non-supported paired aperture tranmissions have been measured. The unmeasured throughputs could be guessed to a fair accuracy from the symmetries in Table 2.

The new data for the square paired apertures shows no significant differences between the upper and lower aperture of the pair in either the average level or the slope, so Tables 2 and 3 contain the average of the upper and lower aperture corrections, while Figure 1 shows the data for each of the new paired aperture measurements separately. The measured red H27 C-1L(1") transmission is ~7% lower than the C-1U correction but is probably low because of jitter or some other pointing problem. The new single aperture data are mostly redundant to the CAL/FOS-106 results and are NOT shown in Figure 1. In Figure 1, the individual quadratic fits to the data are solid lines, and these coefficients are written on the plots. The dashed lines are the final adopted average aperture corrections from Table 3, where these fits are normalized to the average corrections of Table 2.

3. FUTURE CALIBRATION CHANGES

The new aperture corrections will be implemented in the PODPS pipeline along with the full scheme to handle the FOS changes in sensitivity with time that is in preparation by Lindler & Bohlin. Any reprocessing of old pre-COSTAR archival data will then have the best estimates for absolute fluxes.

REFERENCE

Bohlin, R. C. 1993, FOS Instrument Science Report CAL/FOS-106.

TABLE

MEAN APERTURE THROUGHPUT RATIOS

GRAT	BLUE	RED	BLUE	RED	BLUE	RED	BLUE	RED	BLUE	RED	BLUE	RED	BLUE	RED	BLUE	RED	BLUE	RED	BLUE	RED
	B-3		B-1		B-2		C-2		C-1U		C-1L		A-3U		A-3L		A-2U		A-2L	
H13	0.59	...	0.40	...	0.26	...	0.39	...												
H13d	0.58																			
H13e									0.61		0.60									
H13f							0.38													
H19	0.60	0.60	0.42	0.44	0.26	0.31c	0.39	0.41												
H19a	0.57	0.60	0.41	0.40b	0.29	0.21b	0.40	0.42												
H19d	0.58																			
H19e	0.57	0.59					0.41	0.40	0.61		0.60									
H19f							0.40													
H19g										0.65		0.66		0.29		0.31		0.45		0.46
H27	0.57	0.59	0.42	0.44	0.26	0.32	0.39	0.42												
H27d	0.57																			
H27e									0.58		0.58									
H27f							0.40													
H27f							0.40													
H27g										0.64		0.60		0.30		0.31		0.48		0.46
H40	0.57	0.61	0.42	0.44	0.27	0.32	0.38	0.42												
H40e									0.58		0.57									
H40f							0.39													
H40g										0.63		0.63		0.29		0.30		0.47		0.47
H57	...	0.59	...	0.44	...	0.31	...	0.41												
H57g										0.62		0.62		0.29		0.30		0.46		0.46
H78	...	0.58	...	0.43	...	0.28	...	0.39												
L15	0.65	0.67	0.46	0.50	0.31	0.30c	0.42	0.45												
L15a	0.64c	0.66	0.46	0.44b	0.32	0.25b	0.44	0.45												
L15e	0.63	0.64					0.42	0.43												
L15f							0.42		0.65		0.64									
L65	...	0.67	...	0.51	...	0.35	...	0.45												
PRIa	0.53	0.54	0.37	0.36b	0.26	0.20b	0.37	0.39												
PRIe	0.52	0.53					0.37	0.37												
PRIf							0.37													

a) PROPID=4211. (PROPID=3106 no letter.)
b) Bad target acquisition. Use as lower limits.
c) Ystep repeatability worse than 3%. Excess jitter or ybase error.
d) PROPID=3235.
e) PROPID=5046.
f) PROPID=5048. There are two separate measurements for H27 blue C2(slit).
g) PROPID=2823

TABLE 2

AVERAGE APERTURE CORRECTIONS AND UNCERTAINTIES AT NOMINAL OTA FOCUS

APER	BLUE	RED	UNC	BLUE	RED	UNC	BLUE	RED	UNC
	HIGH DISP			LOW DISP			PRISM		
B3(1")	0.58	0.594	.02	0.64	0.66	.02	0.525	0.535	.02
B1(0.5")	0.41	0.44	.02	0.46	0.50	.04	0.37	0.39	.04
B2(0.3")	0.27	0.31	.03	0.31	0.35	.03	0.26	0.30	.03
C2-SLIT	0.39	0.41	.02	0.425	0.445	.02	0.37	0.38	.02
C1(1")	0.59	0.63	.03	0.645		.03			
A2(0.5")		0.465	.02						
A3(.25")		0.30	.02						

The uncertainties (UNC) do not include the possible contributions of pointing errors, OTA "breathing", jitter, or ybase errors for an arbitrary science observation.

TABLE 3

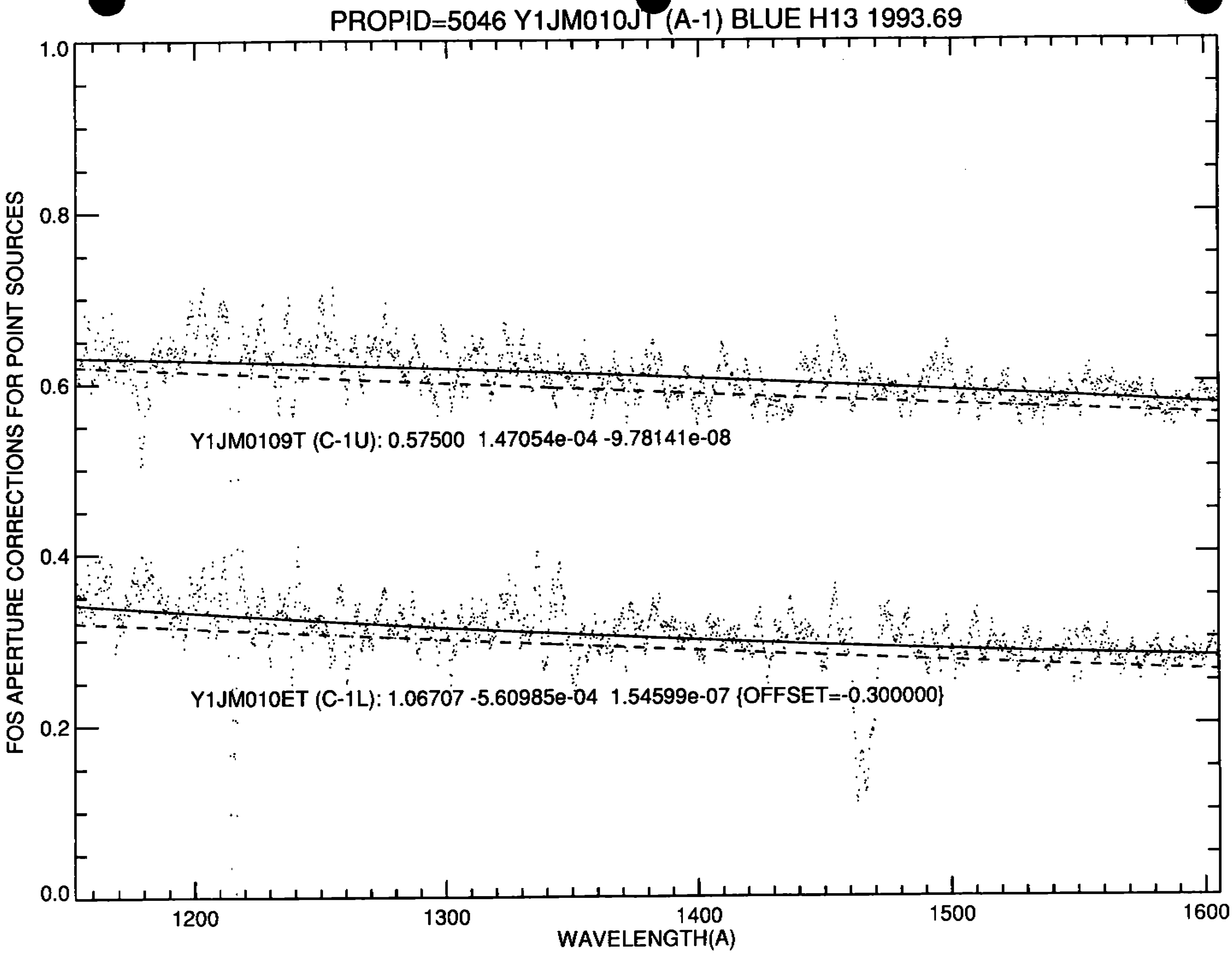
SUMMARY OF AVERAGE FOS APERTURE COEFICIENTS

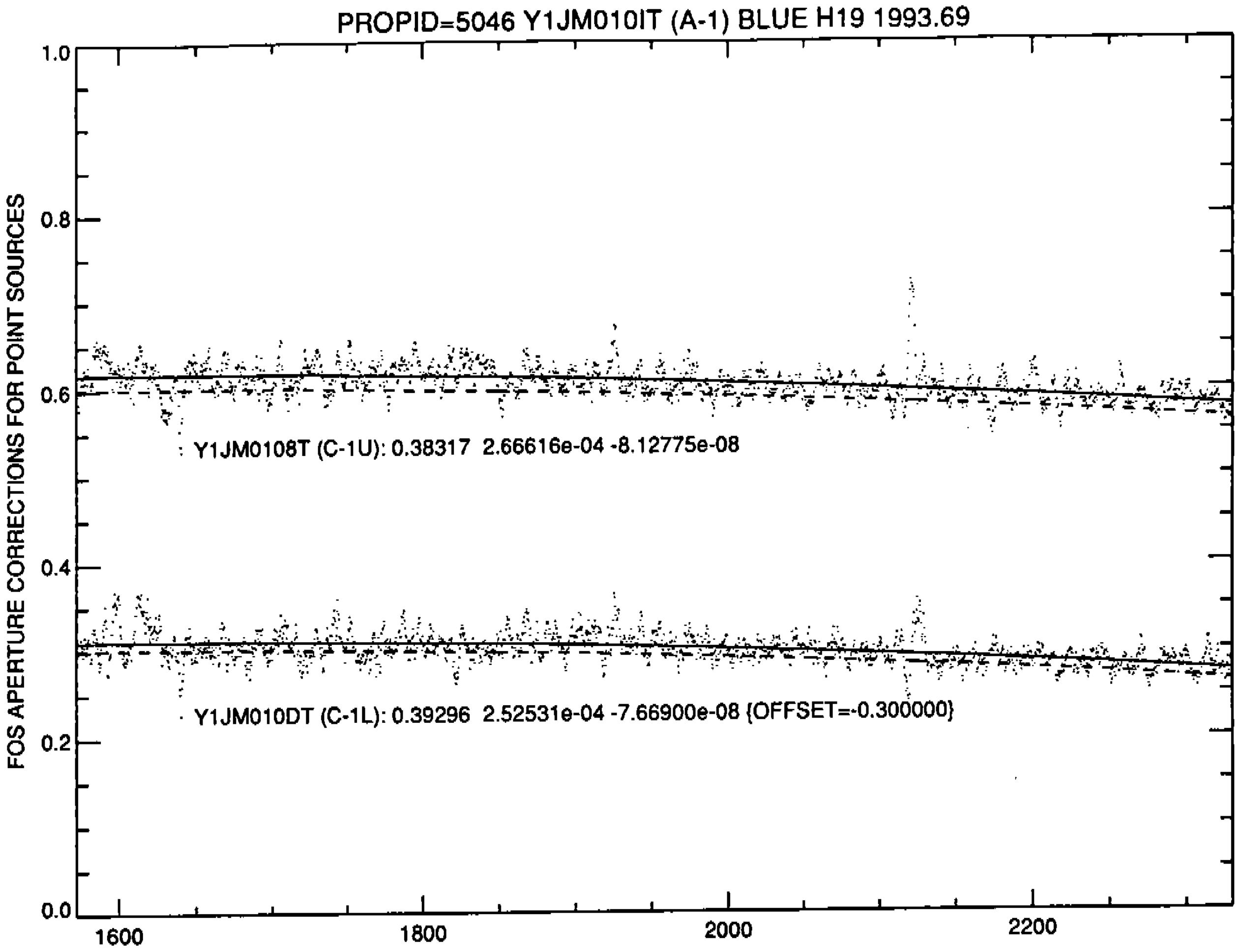
DETEC	FGWA	APER	C0	C1	C2	WMIN	WMAX	NAV
BLUE	H13	B-1	7.40123e-01	-3.69668e-04	9.36560e-08	1151.00	1609.00	1
BLUE	H13	B-2	2.43460e-01	3.89984e-05	-1.41963e-08	1151.00	1609.00	1
BLUE	H13	B-3	4.40583e-01	3.33357e-04	-1.66872e-07	1151.00	1610.00	2
BLUE	H13	C-1	8.21033e-01	-2.06966e-04	2.83924e-08	1151.00	1610.00	2
BLUE	H13	C-2	2.52585e-01	2.36710e-04	-9.84914e-08	1151.00	1610.00	2
BLUE	H19	B-1	8.82408e-02	3.21723e-04	-7.93770e-08	1567.00	2335.00	2
BLUE	H19	B-2	1.83798e-02	2.45943e-04	-5.92163e-08	1567.00	2335.00	2
BLUE	H19	B-3	2.03007e-01	4.18252e-04	-1.13894e-07	1567.00	2336.00	4
BLUE	H19	C-1	3.88068e-01	2.59574e-04	-7.89838e-08	1567.00	2336.00	2
BLUE	H19	C-2	4.91935e-02	3.46746e-04	-8.70985e-08	1567.00	2336.00	4
BLUE	H27	B-1	3.05223e-01	8.90864e-05	-1.82856e-08	2213.00	3308.00	1
BLUE	H27	B-2	1.97932e-01	5.99049e-05	-1.20871e-08	2214.00	3308.00	1
BLUE	H27	B-3	6.38760e-01	-2.25195e-06	-6.79883e-09	2213.00	3308.00	2
BLUE	H27	C-1	5.55440e-01	7.17201e-05	-2.11646e-08	2213.00	3308.00	2
BLUE	H27	C-2	4.08958e-01	7.34132e-06	-5.07745e-09	2213.00	3308.00	3
BLUE	H40	B-1	3.27705e-01	5.71995e-05	-9.00812e-09	3229.00	4830.00	1
BLUE	H40	B-2	2.41780e-01	2.16797e-05	-3.59468e-09	3229.00	4830.00	1
BLUE	H40	B-3	7.12372e-01	-4.36912e-05	2.65989e-09	3229.00	4830.00	1
BLUE	H40	C-1	5.94378e-01	1.76763e-05	-4.59332e-09	3229.00	4831.00	2
BLUE	H40	C-2	2.98353e-01	5.96429e-05	-9.03819e-09	3229.00	4831.00	2
BLUE	L15	B-1	4.32666e-01	1.45117e-05	2.19650e-10	1151.00	2523.00	2
BLUE	L15	B-2	1.49524e-01	1.51922e-04	-3.35666e-08	1151.00	2523.00	2
BLUE	L15	B-3	6.58452e-01	-1.06383e-06	-4.70729e-09	1151.00	2526.00	3
BLUE	L15	C-1	5.50613e-01	1.12978e-04	-3.20777e-08	1151.00	2526.00	2
BLUE	L15	C-2	3.01223e-01	1.21510e-04	-2.81524e-08	1151.00	2526.00	4
BLUE	PRI	B-1	3.22353e-01	3.44178e-05	-5.03978e-09	1498.00	4995.00	1
BLUE	PRI	B-1	-1.21560e+00	8.38476e-04	-1.04393e-07	4993.00	5961.00	1
BLUE	PRI	B-2	2.15567e-01	3.03832e-05	-3.96765e-09	1498.00	4995.00	1
BLUE	PRI	B-2	-4.04202e-01	4.26773e-04	-5.85007e-08	4993.00	5961.00	1
BLUE	PRI	B-3	5.07045e-01	1.48724e-05	-2.71238e-09	1498.00	4995.00	2
BLUE	PRI	B-3	-3.07691e-01	6.50918e-04	-9.74300e-08	4993.00	5961.00	2
BLUE	PRI	C-2	3.25306e-01	3.39170e-05	-5.42515e-09	1498.00	4995.00	3
BLUE	PRI	C-2	1.54610e+00	-1.98827e-04	-7.78873e-09	4993.00	5961.00	3
AMBER	H19	A-2	2.56369e-01	1.52290e-04	-2.29875e-08	1588.00	2317.00	2
AMBER	H19	A-3	5.69644e-02	1.98838e-04	-3.76404e-08	1588.00	2317.00	2
AMBER	H19	B-1	9.71168e-02	3.27939e-04	-7.71301e-08	1588.00	2316.00	2
AMBER	H19	B-2	7.38173e-03	2.89346e-04	-6.80307e-08	1588.00	2317.00	1
AMBER	H19	B-3	3.05056e-01	2.93554e-04	-7.37150e-08	1588.00	2318.00	3
AMBER	H19	C-1	6.87139e-01	-8.78466e-05	2.96762e-08	1588.00	2317.00	2
AMBER	H19	C-2	6.14032e-02	3.43563e-04	-8.35636e-08	1588.00	2318.00	3
AMBER	H27	A-2	3.54858e-01	8.10490e-05	-1.47280e-08	2216.00	3283.00	2
AMBER	H27	A-3	3.06067e-01	7.30640e-06	-3.41775e-09	2215.00	3283.00	2
AMBER	H27	B-1	2.89623e-01	1.24265e-04	-2.49962e-08	2217.00	3284.00	1
AMBER	H27	B-2	1.55147e-01	1.29845e-04	-2.64168e-08	2217.00	3283.00	1
AMBER	H27	B-3	4.63997e-01	1.24362e-04	-2.76913e-08	2217.00	3284.00	1
AMBER	H27	C-1	1.13753e+00	-3.66820e-04	6.54760e-08	2215.00	3282.00	2
AMBER	H27	C-2	2.76376e-01	1.09996e-04	-2.20588e-08	2217.00	3284.00	1
AMBER	H40	A-2	4.25215e-01	2.89289e-05	-4.68249e-09	3229.00	4788.00	2
AMBER	H40	A-3	4.28241e-01	-6.30335e-05	7.64942e-09	3229.00	4790.00	2
AMBER	H40	B-1	3.68828e-01	5.34220e-05	-8.78792e-09	3226.00	4791.00	1
AMBER	H40	B-2	3.35431e-01	-6.26521e-06	-1.91675e-11	3226.00	4791.00	1
AMBER	H40	B-3	4.41792e-01	8.93434e-05	-1.26584e-08	3229.00	4790.00	1
AMBER	H40	C-1	6.46468e-01	-2.70540e-06	-3.45380e-10	3229.00	4788.00	2
AMBER	H40	C-2	3.31970e-01	4.88348e-05	-7.23698e-09	3226.00	4788.00	1

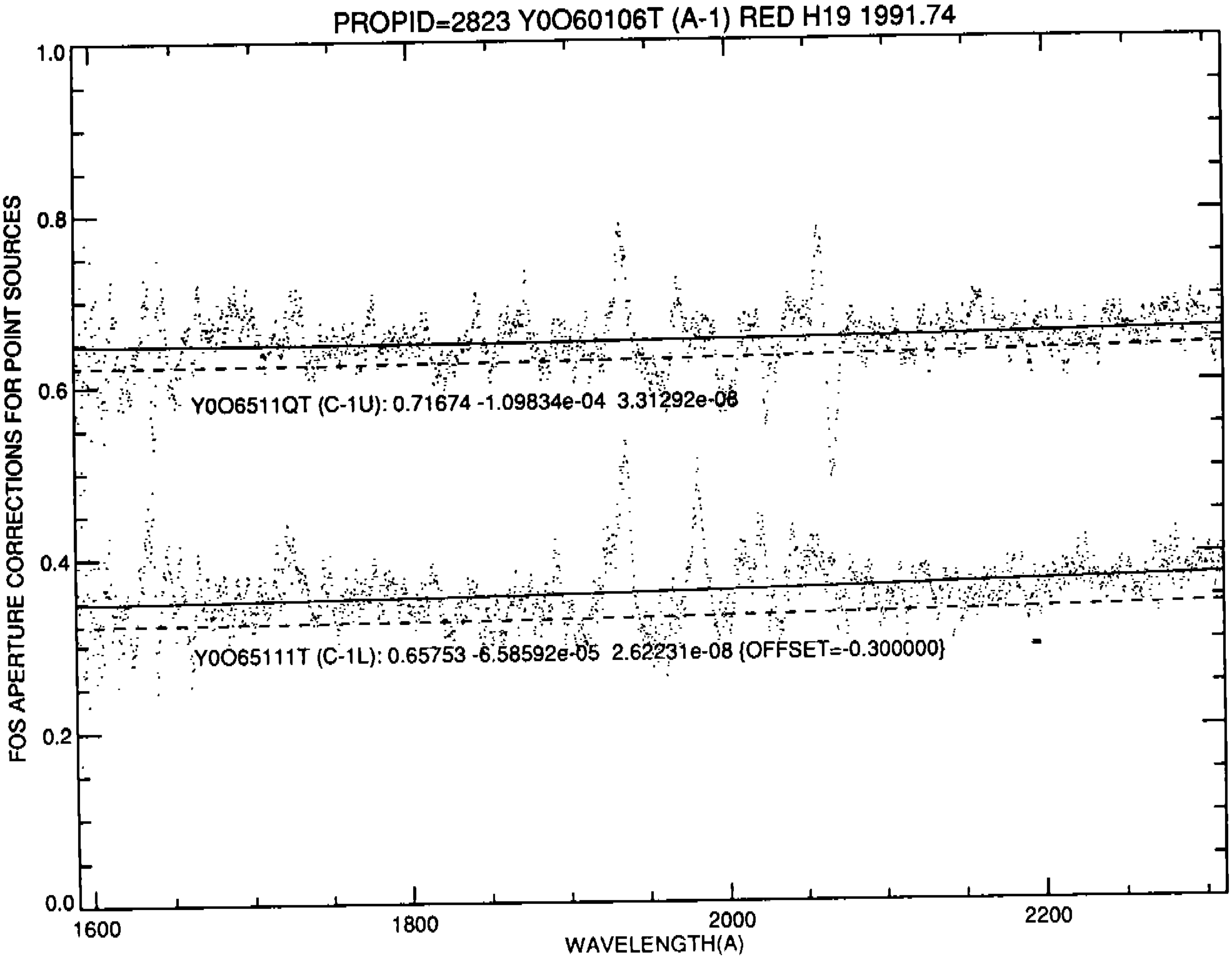
AMBER	H57	A-2	4.05738e-01	1.63947e-05	-1.03815e-09	4561.00	6831.00	2
AMBER	H57	A-3	1.64198e-01	5.51862e-05	-5.43266e-09	4561.00	6829.00	2
AMBER	H57	B-1	9.42854e-02	1.18346e-04	-9.99186e-09	4559.00	6829.00	1
AMBER	H57	B-2	7.82160e-03	1.17688e-04	-1.12031e-08	4559.00	6829.00	1
AMBER	H57	B-3	3.82182e-01	7.18638e-05	-6.01001e-09	4561.00	6831.00	1
AMBER	H57	C-1	6.37723e-01	-6.30680e-06	8.58182e-10	4561.00	6829.00	2
AMBER	H57	C-2	2.98603e-01	4.89152e-05	-5.08857e-09	4561.00	6829.00	1
AMBER	H78	B-1	6.35974e-01	-5.54944e-05	3.89157e-09	6260.00	8501.00	1
AMBER	H78	B-2	5.66594e-01	-5.13968e-05	2.23867e-09	6263.00	8501.00	1
AMBER	H78	B-3	6.07382e-01	6.96702e-06	-1.17948e-09	6260.00	8501.00	1
AMBER	H78	C-2	5.68258e-01	-3.24092e-05	1.47605e-09	6263.00	8501.00	1
AMBER	L15	B-1	4.61080e-01	6.36551e-05	-2.16757e-08	1619.00	2444.00	2
AMBER	L15	B-1	-1.16501e+02	1.38912e-01	-4.11667e-05	1568.00	1622.00	2
AMBER	L15	B-2	2.80945e-01	9.48045e-05	-2.96085e-08	1619.00	2441.00	1
AMBER	L15	B-2	-1.86656e+02	2.29110e-01	-7.01678e-05	1568.00	1622.00	1
AMBER	L15	B-3	8.16973e-01	-9.71303e-05	9.52600e-09	1619.00	2444.00	3
AMBER	L15	B-3	-4.57722e+02	5.64036e-01	-1.73500e-04	1568.00	1622.00	3
AMBER	L15	C-2	4.47359e-01	3.01858e-05	-1.52994e-08	1619.00	2444.00	3
AMBER	L15	C-2	-2.32669e+02	2.84751e-01	-8.69442e-05	1568.00	1622.00	3
AMBER	L65	B-1	3.42255e-01	6.08407e-05	-5.67747e-09	3752.00	7077.00	1
AMBER	L65	B-1	-8.79137e+01	4.65463e-02	-6.12597e-06	3538.00	3755.00	1
AMBER	L65	B-2	2.08488e-01	5.94196e-05	-5.96003e-09	3752.00	7077.00	1
AMBER	L65	B-2	-8.24104e+01	4.42530e-02	-5.91574e-06	3538.00	3755.00	1
AMBER	L65	B-3	4.72254e-01	7.66937e-05	-7.52411e-09	3752.00	7077.00	1
AMBER	L65	B-3	-1.13785e+02	6.01869e-02	-7.91221e-06	3538.00	3755.00	1
AMBER	L65	C-2	3.16847e-01	5.62395e-05	-5.83242e-09	3752.00	7077.00	1
AMBER	L65	C-2	-8.21750e+01	4.38217e-02	-5.81062e-06	3538.00	3755.00	1
AMBER	PRI	B-1	3.77070e-01	6.32113e-06	-3.38474e-10	1618.00	7480.00	1
AMBER	PRI	B-1	-1.52755e+00	6.96870e-04	-5.86245e-08	7478.00	8890.00	1
AMBER	PRI	B-2	2.31237e-01	4.06172e-05	-4.24250e-09	1618.00	7480.00	1
AMBER	PRI	B-2	-7.26827e+00	2.04362e-03	-1.37986e-07	7478.00	8890.00	1
AMBER	PRI	B-3	5.45792e-01	-1.21257e-05	2.67205e-09	1618.00	7480.00	2
AMBER	PRI	B-3	-4.57158e+00	1.53915e-03	-1.13263e-07	7478.00	8890.00	2
AMBER	PRI	C-2	3.75982e-01	1.69350e-06	-1.08250e-11	1618.00	7480.00	2
AMBER	PRI	C-2	-1.71501e+00	7.14721e-04	-5.79700e-08	7478.00	8890.00	2

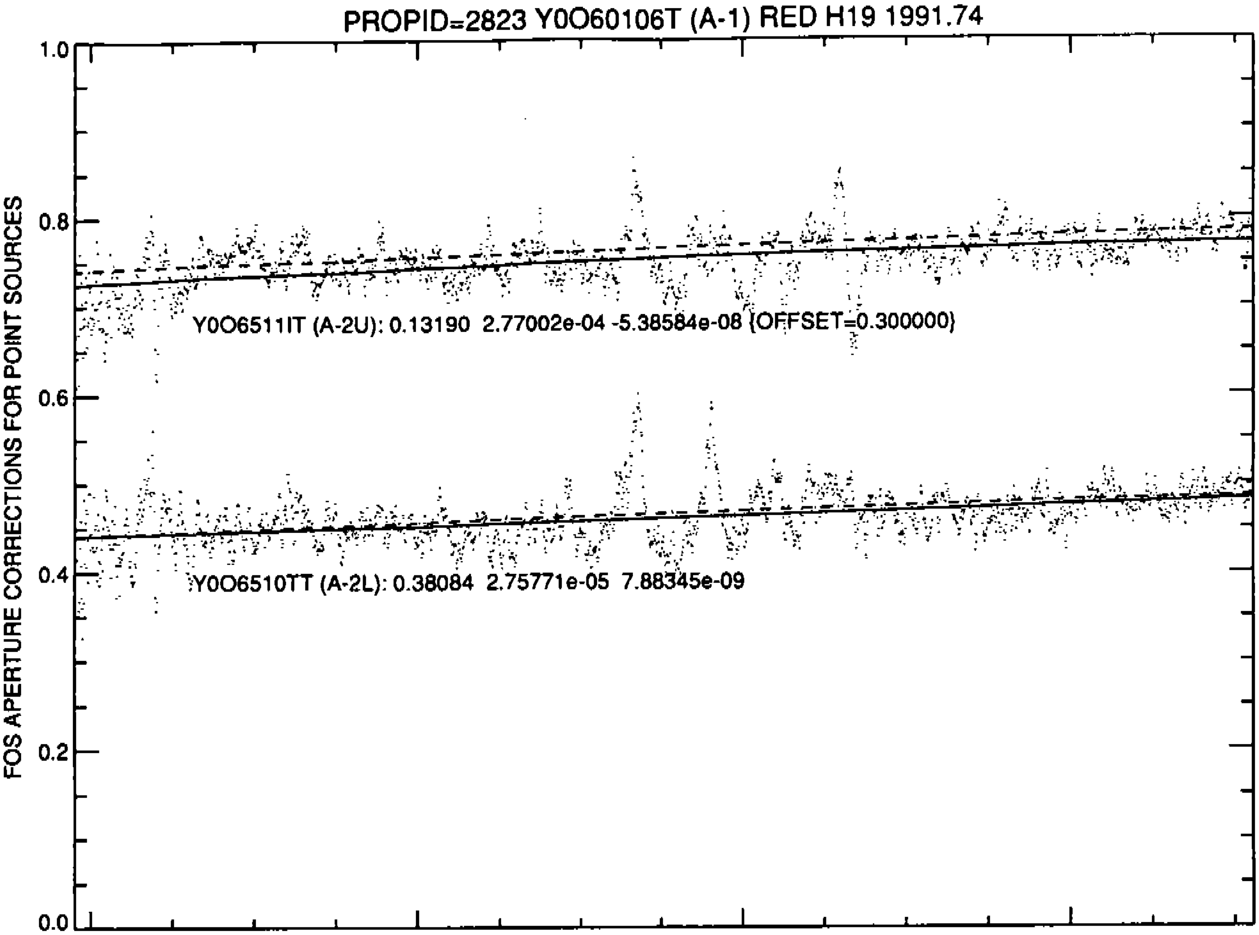
A(ap)=C0+C1*W+C2*W**2, where W is the wavelength in Angstroms.

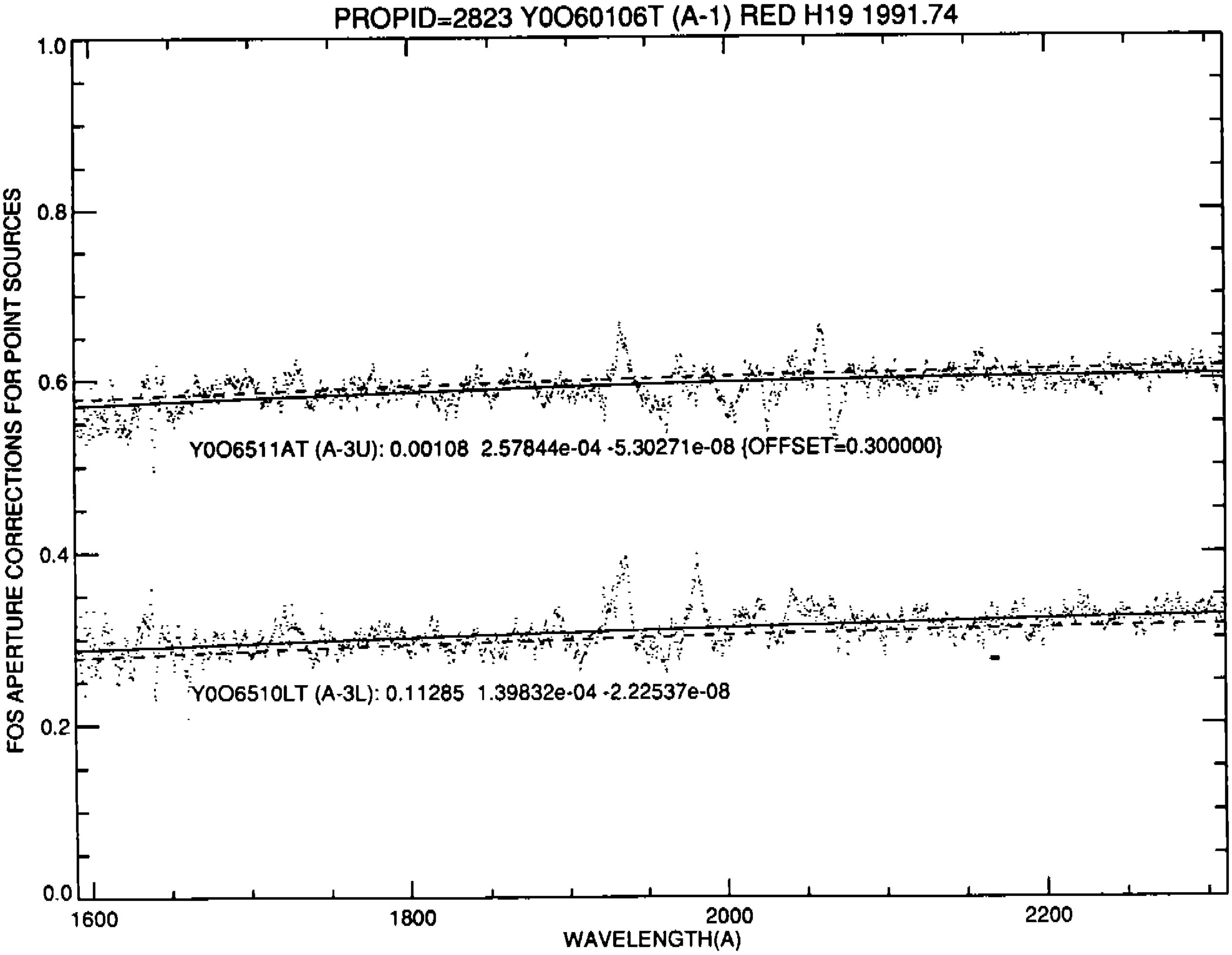
FIG. 1 - The individual quadratic fits to the data are solid lines, and these coefficients are written on the plots. The dashed lines are the final adopted average aperture corrections from Table 3, where these fits are normalized to the average corrections of Table 2. The small aperture A3(.25") ratios show less fixed pattern than the C1(1") or A2(.5") measurements, which suggests that the flat field blemishes are typically larger than 0.25" on the red side.

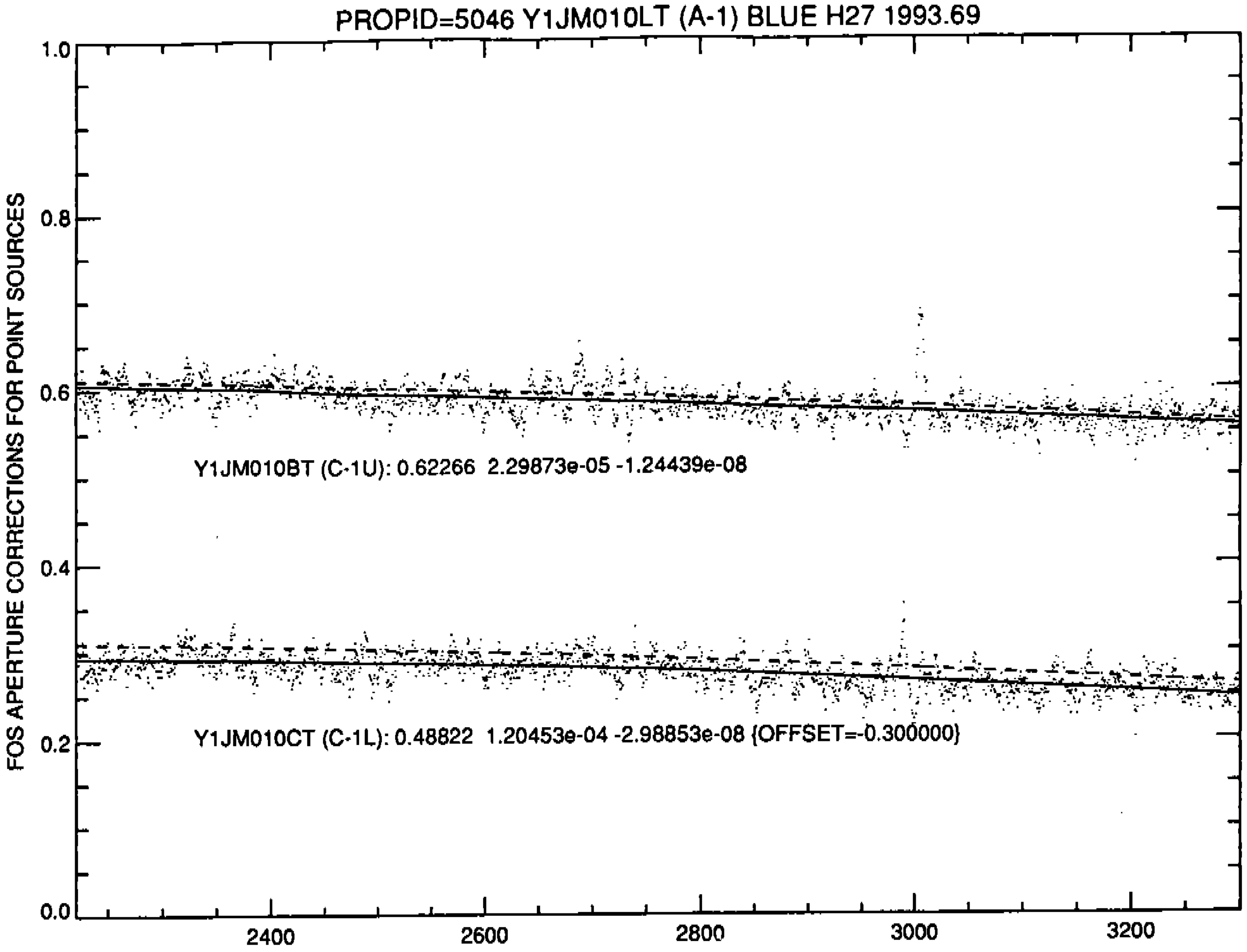

PROPID=5046 Y1JM010JT (A-1) BLUE H13 1993.69
Y1JM0109T (C-1U): 0.57500 1.47054e-04 -9.78141e-08
Y1JM010ET (C-1L): 1.06707 -5.60985e-04 1.54599e-07 {OFFSET=-0.300000}
FOS APERTURE CORRECTIONS FOR POINT SOURCES
WAVELENGTH(A)
1.0
0.8
0.6
0.4
0.2
0.0
1200
1300
1400
1500
1600


PROPID=5046 Y1JM010IT (A-1) BLUE H19 1993.69
FOS APERTURE CORRECTIONS FOR POINT SOURCES
Y1JM0108T (C-1U): 0.38317 2.66616e-04 -8.12775e-08
Y1JM010DT (C-1L): 0.39296 2.52531e-04 -7.66900e-08 {OFFSET=-0.300000}
1.0
0.8
0.6
0.4
0.2
0.0
1600
1800
2000
2200

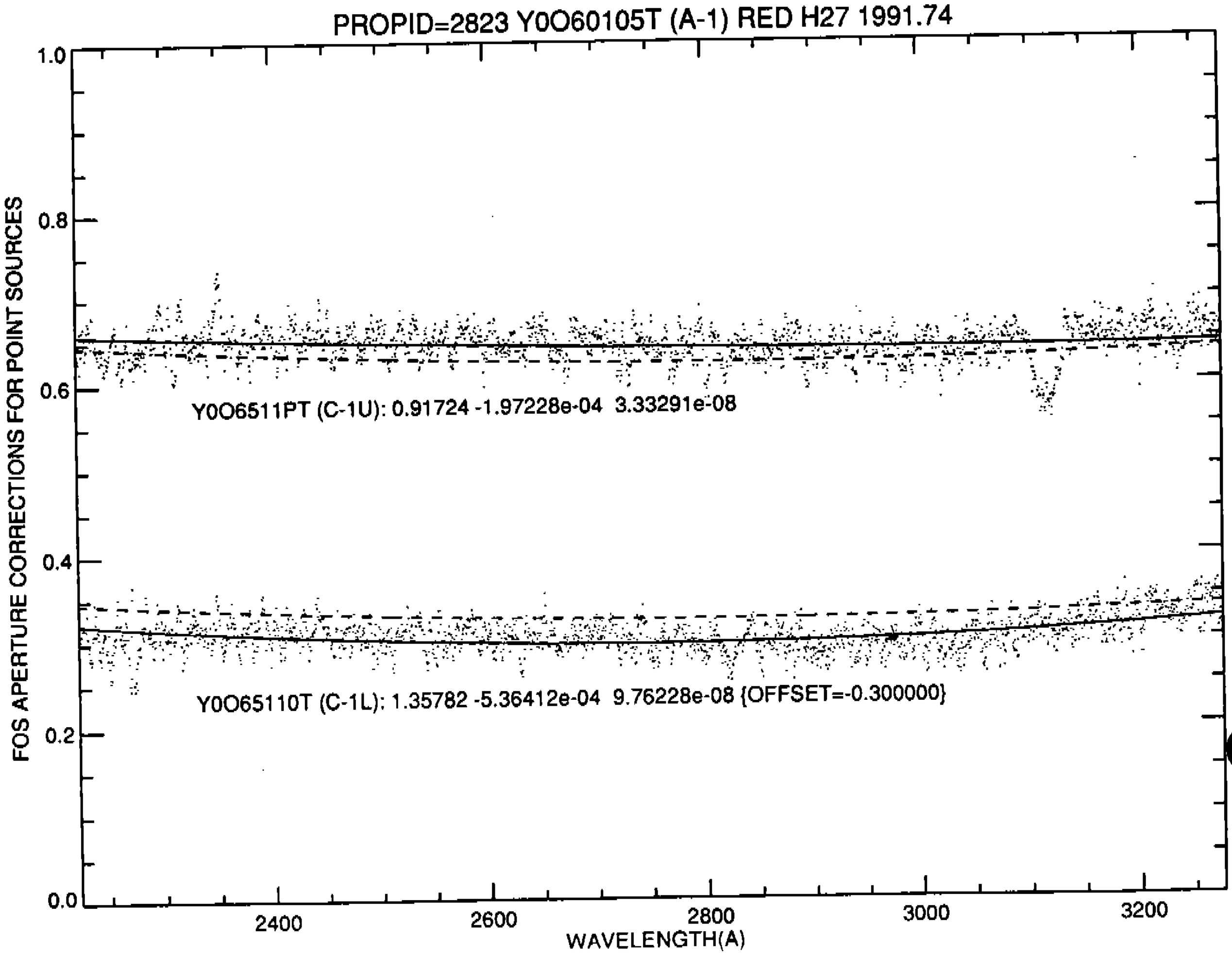

PROPID=2823 Y0O60106T (A-1) RED H19 1991.74
FOS APERTURE CORRECTIONS FOR POINT SOURCES
Y0O6511QT (C-1U): 0.71674 -1.09834e-04 3.31292e-08
Y0O65111T (C-1L): 0.65753 -6.58592e-05 2.62231e-08 {OFFSET=-0.300000}
1.0
0.8
0.6
0.4
0.2
0.0
1600
1800
2000
2200
WAVELENGTH(A)


PROPID=2823 Y0O60106T (A-1) RED H19 1991.74
FOS APERTURE CORRECTIONS FOR POINT SOURCES
Y0O6511IT (A-2U): 0.13190 2.77002e-04 -5.38584e-08 (OFFSET=0.300000)
Y0O6510TT (A-2L): 0.38084 2.75771e-05 7.88345e-09

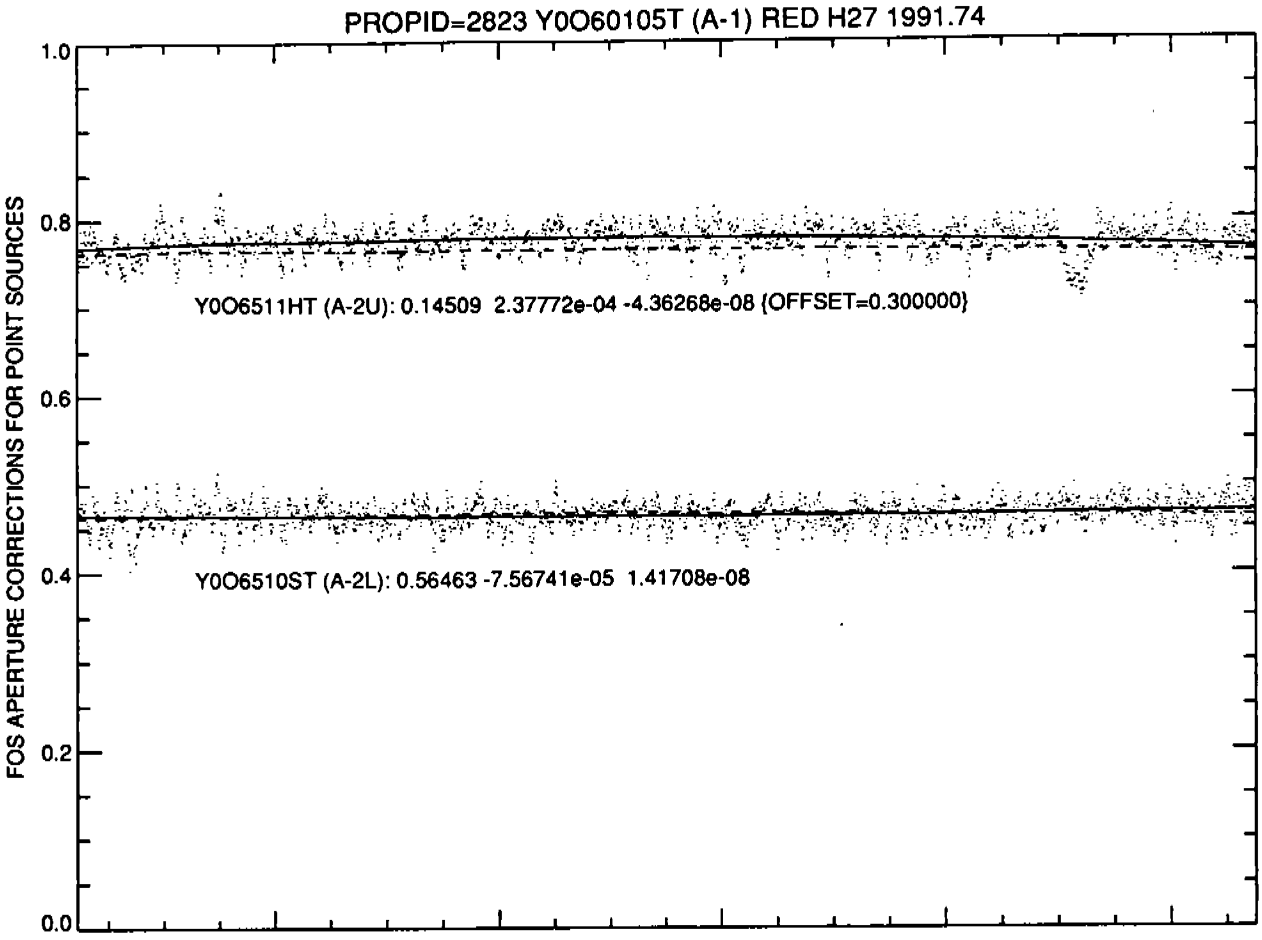

PROPID=2823 Y0O60106T (A-1) RED H19 1991.74
FOS APERTURE CORRECTIONS FOR POINT SOURCES
Y0O6511AT (A-3U): 0.00108 2.57844e-04 -5.30271e-08 (OFFSET=0.300000)
Y0O6510LT (A-3L): 0.11285 1.39832e-04 -2.22537e-08
WAVELENGTH(A)

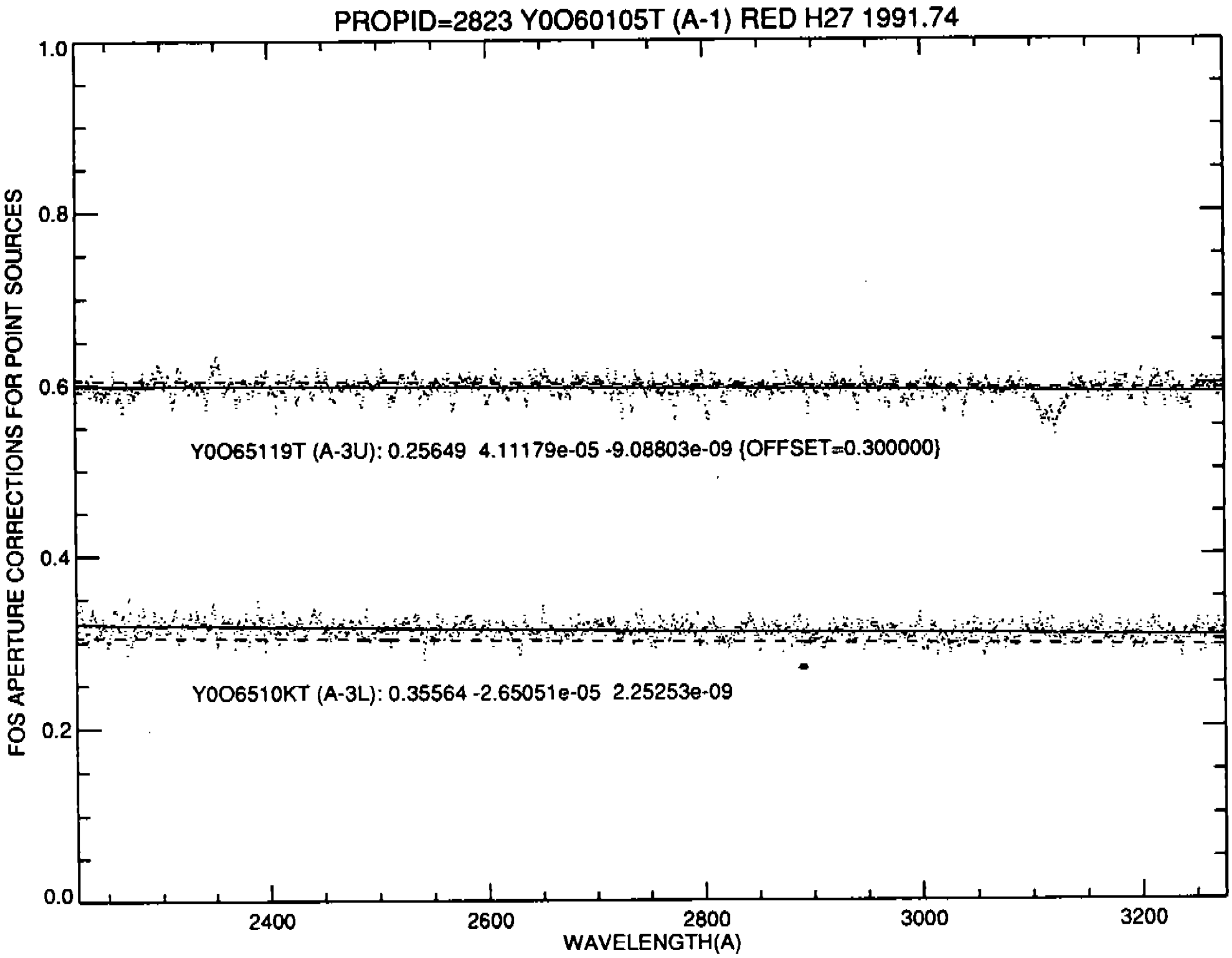


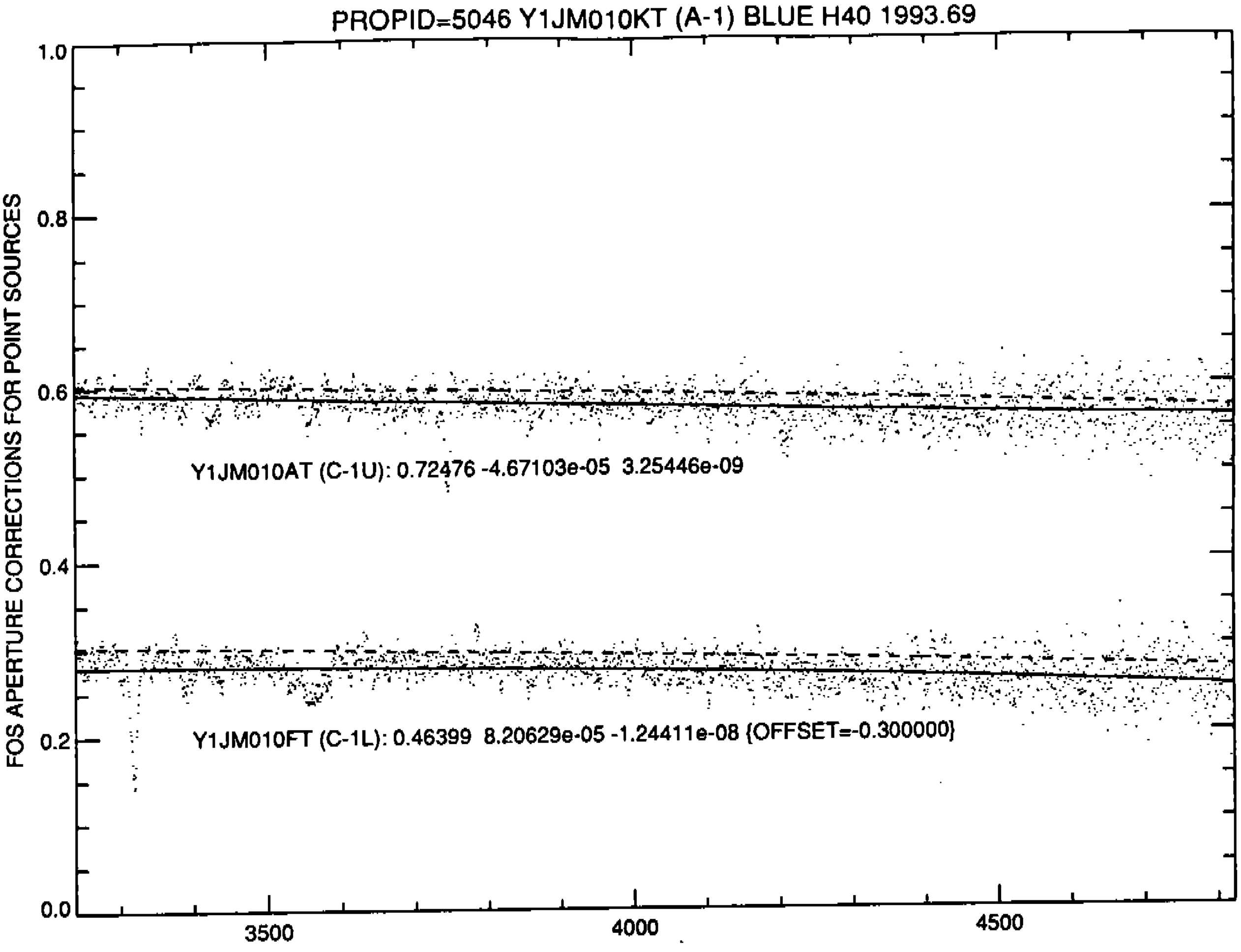
PROPID=5046 Y1JM010LT (A-1) BLUE H27 1993.69
FOS APERTURE CORRECTIONS FOR POINT SOURCES
Y1JM010BT (C-1U): 0.62266 2.29873e-05 -1.24439e-08
Y1JM010CT (C-1L): 0.48822 1.20453e-04 -2.98853e-08 {OFFSET=-0.300000}



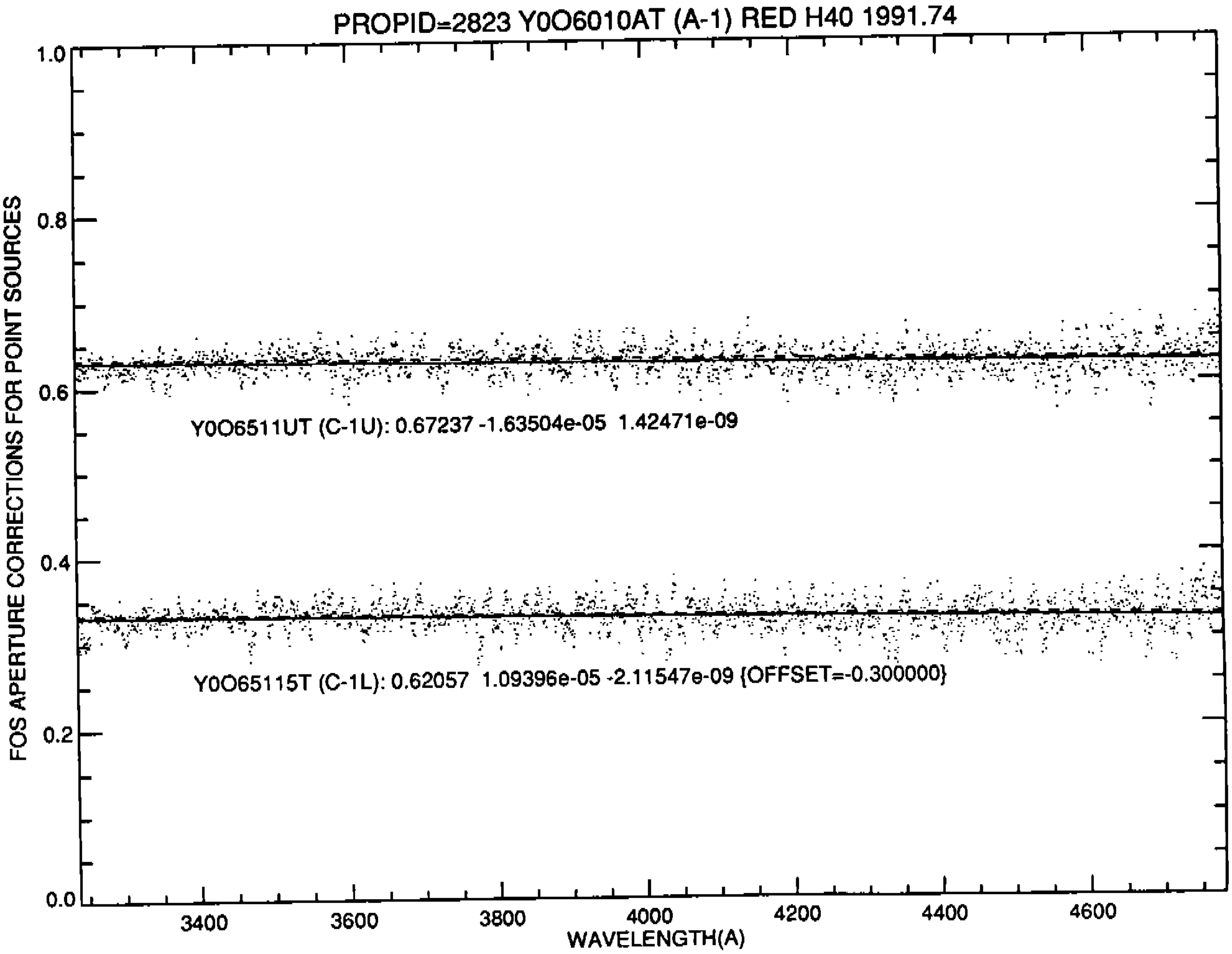
PROPID=2823 Y0O60105T (A-1) RED H27 1991.74
FOS APERTURE CORRECTIONS FOR POINT SOURCES
Y0O6511PT (C-1U): 0.91724 -1.97228e-04 3.33291e-08
Y0O6511OT (C-1L): 1.35782 -5.36412e-04 9.76228e-08 {OFFSET=-0.300000}
WAVELENGTH(A)


PROPID=2823 Y0O60105T (A-1) RED H27 1991.74
FOS APERTURE CORRECTIONS FOR POINT SOURCES
1.0
0.8
0.6
0.4
0.2
0.0
Y0O6511HT (A-2U): 0.14509 2.37772e-04 -4.36268e-08 {OFFSET=0.300000}
Y0O6510ST (A-2L): 0.56463 -7.56741e-05 1.41708e-08

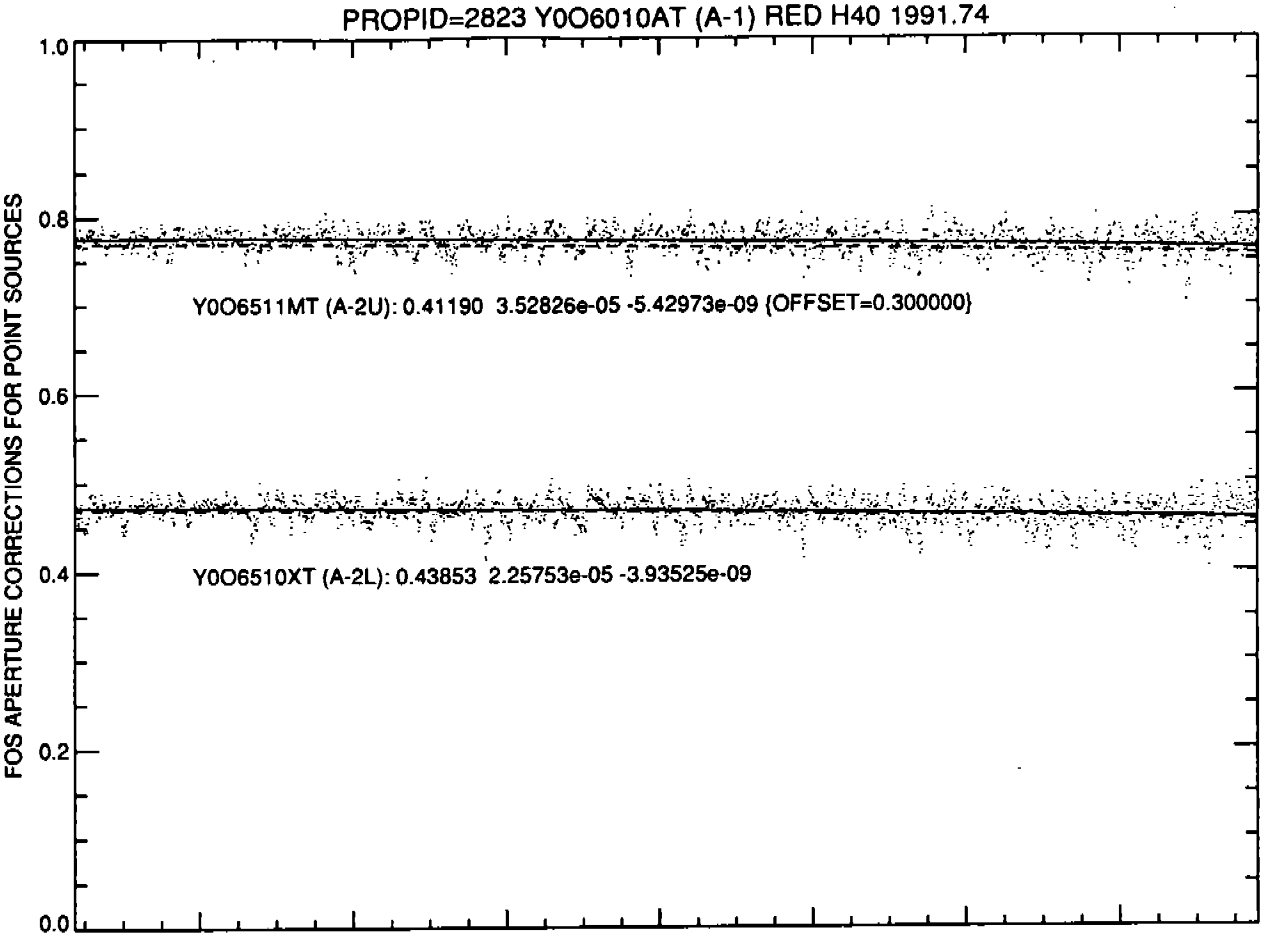

PROPID=2823 Y0O60105T (A-1) RED H27 1991.74
FOS APERTURE CORRECTIONS FOR POINT SOURCES
1.0
0.8
0.6
0.4
0.2
0.0
Y0O65119T (A-3U): 0.25649 4.11179e-05 -9.08803e-09 {OFFSET=0.300000}
Y0O6510KT (A-3L): 0.35564 -2.65051e-05 2.25253e-09
2400
2600
2800
3000
3200
WAVELENGTH(A)



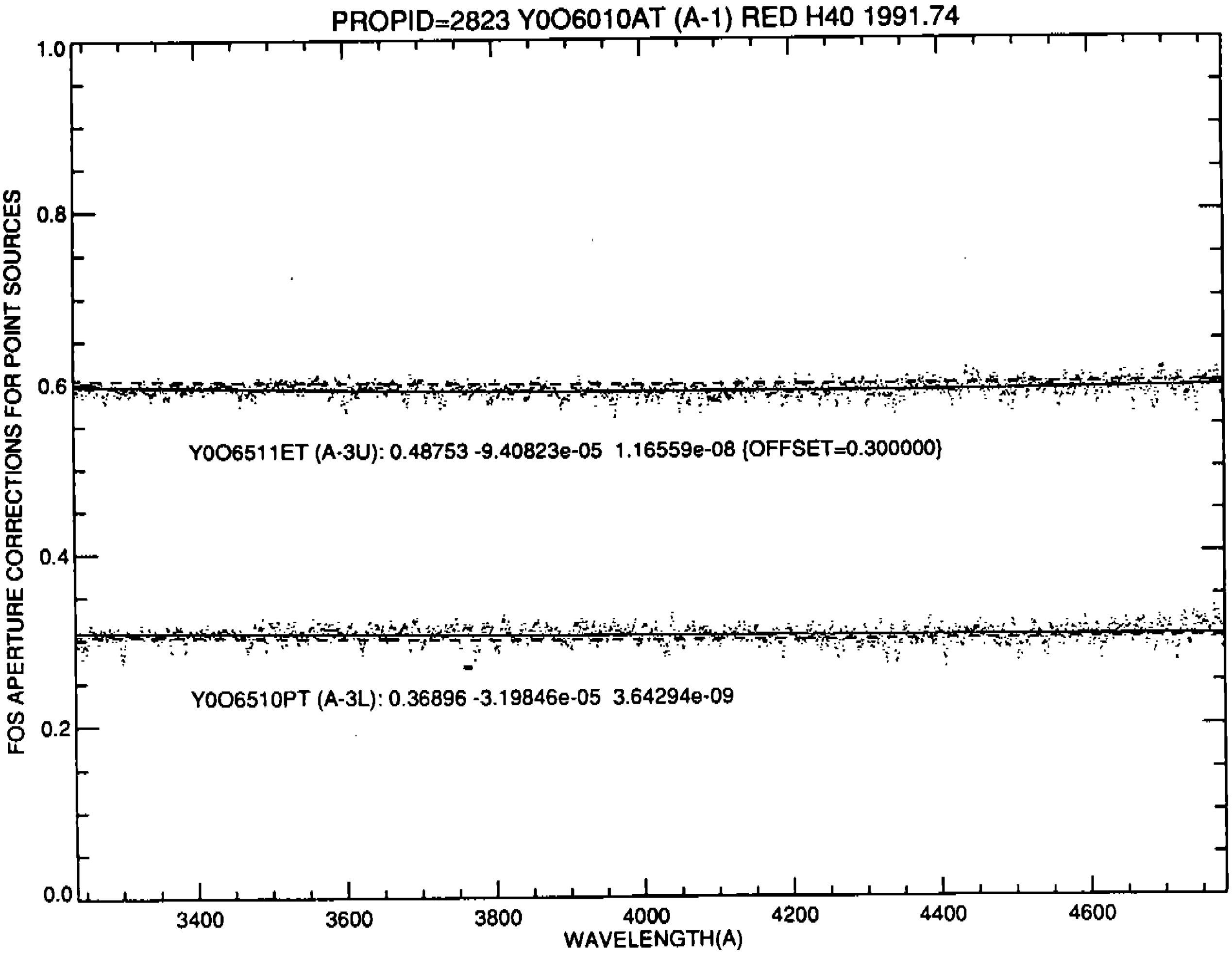
PROPID=5046 Y1JM010KT (A-1) BLUE H40 1993.69
FOS APERTURE CORRECTIONS FOR POINT SOURCES
Y1JM010AT (C-1U): 0.72476 -4.67103e-05 3.25446e-09
Y1JM010FT (C-1L): 0.46399 8.20629e-05 -1.24411e-08 {OFFSET=-0.300000}



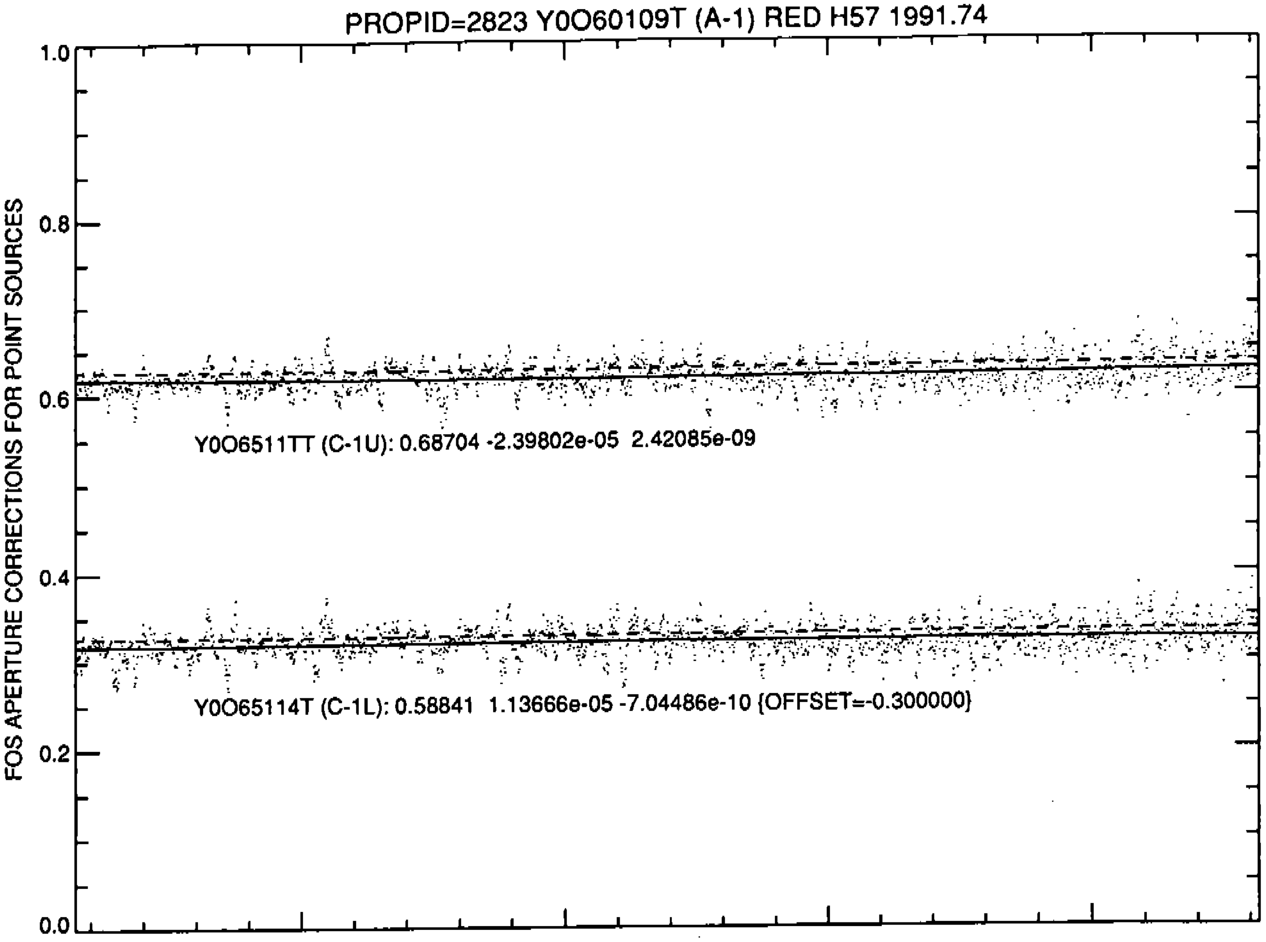
PROPID=2823 Y0O6010AT (A-1) RED H40 1991.74
FOS APERTURE CORRECTIONS FOR POINT SOURCES
Y0O6511UT (C-1U): 0.67237 -1.63504e-05 1.42471e-09
Y0O65115T (C-1L): 0.62057 1.09396e-05 -2.11547e-09 {OFFSET=-0.300000}
WAVELENGTH(A)

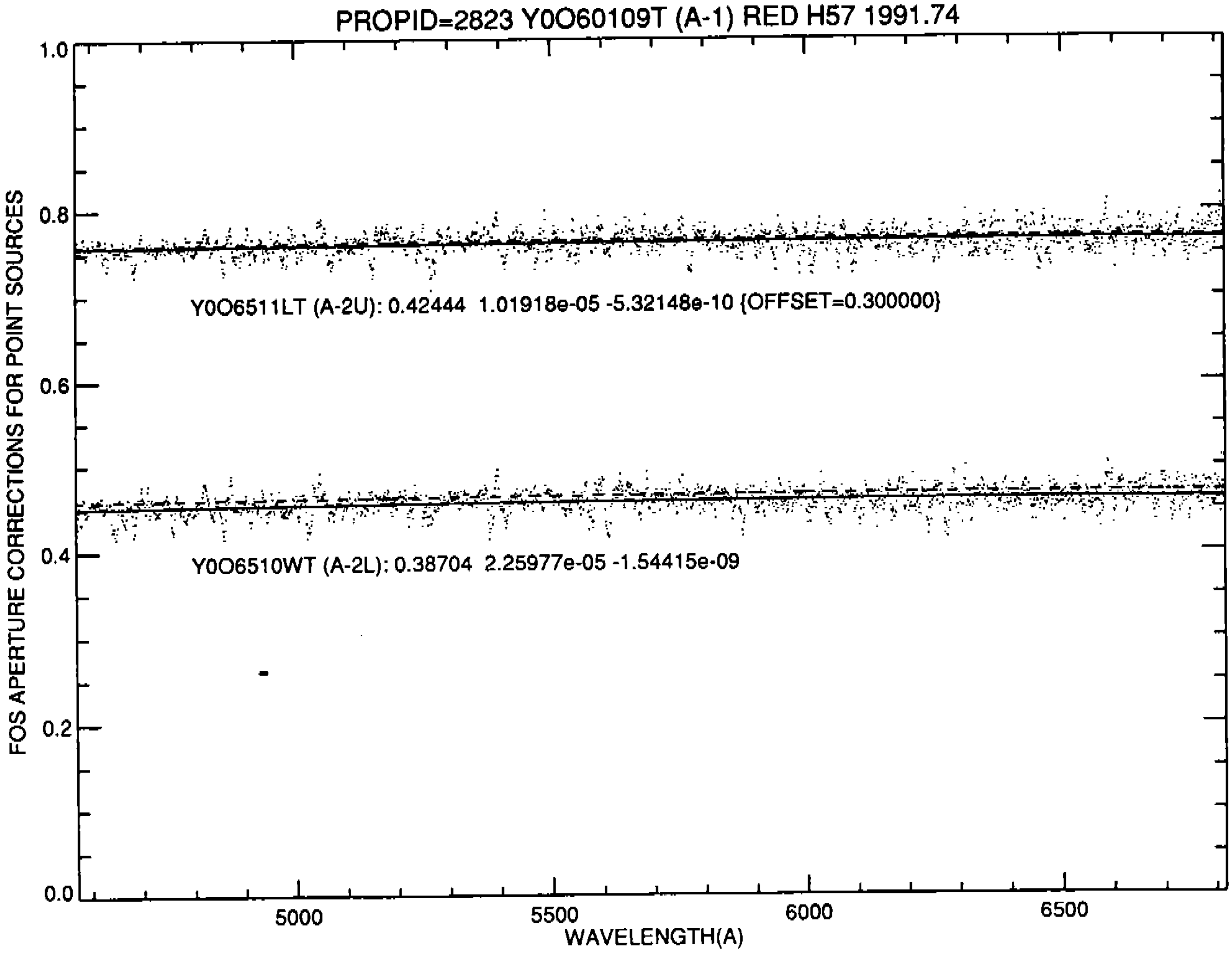


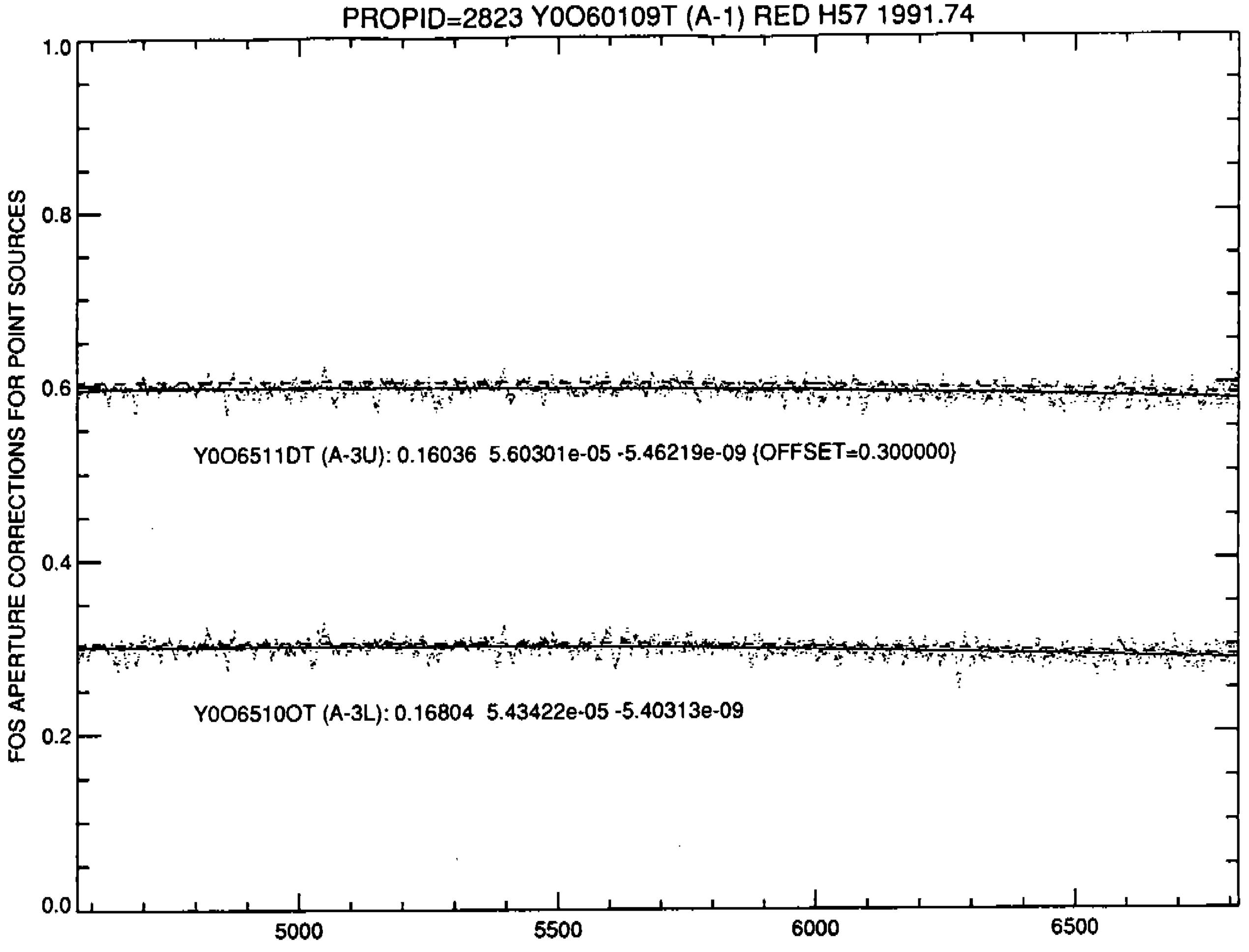
PROPID=2823 Y0O6010AT (A-1) RED H40 1991.74
FOS APERTURE CORRECTIONS FOR POINT SOURCES
1.0
0.8
0.6
0.4
0.2
0.0
Y0O6511MT (A-2U): 0.41190 3.52826e-05 -5.42973e-09 {OFFSET=0.300000}
Y0O6510XT (A-2L): 0.43853 2.25753e-05 -3.93525e-09

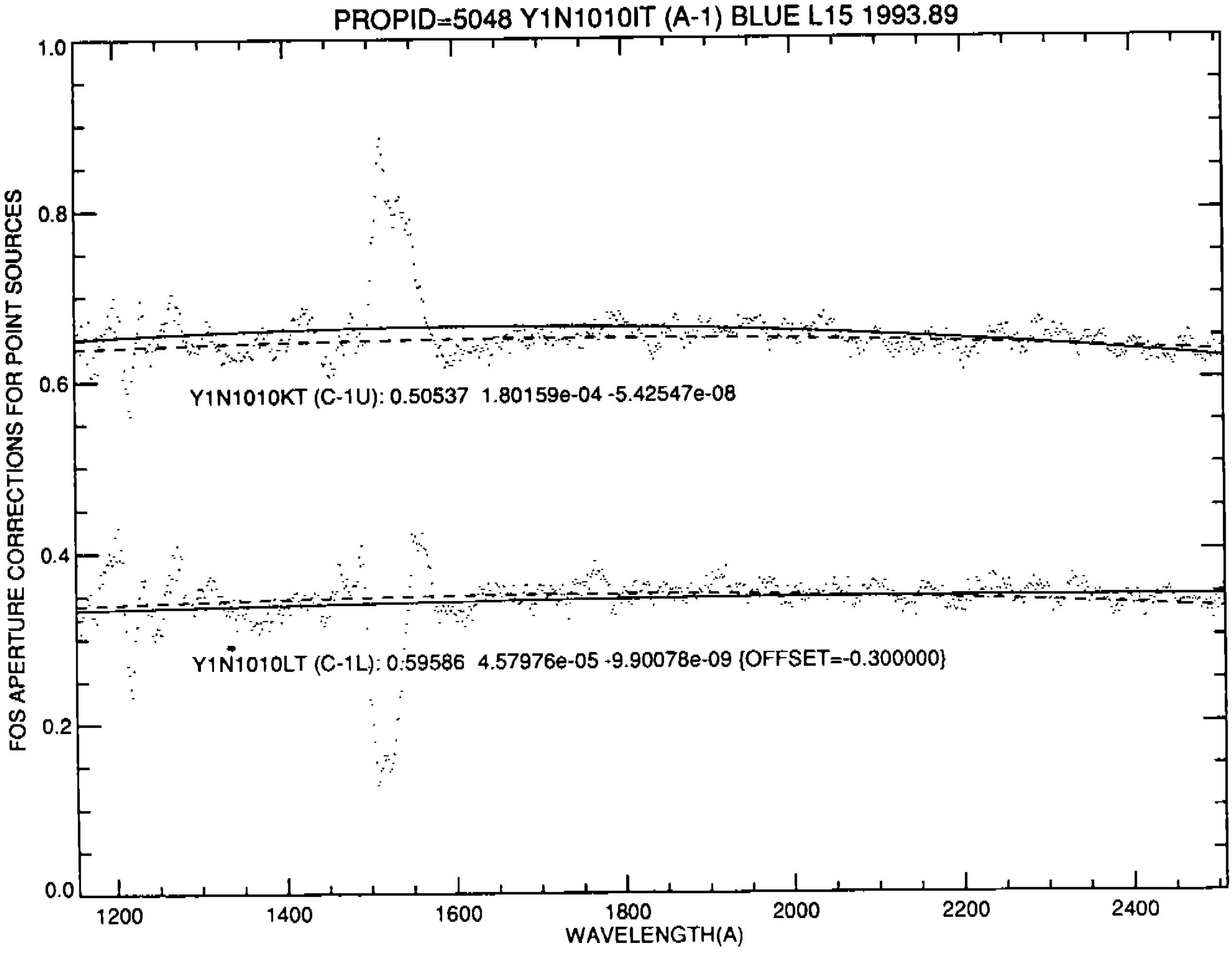


PROPID=2823 Y0O6010AT (A-1) RED H40 1991.74
FOS APERTURE CORRECTIONS FOR POINT SOURCES
1.0
0.8
0.6
0.4
0.2
0.0
Y0O6511ET (A-3U): 0.48753 -9.40823e-05 1.16559e-08 {OFFSET=0.300000}
Y0O6510PT (A-3L): 0.36896 -3.19846e-05 3.64294e-09
3400
3600
3800
4000
4200
4400
4600
WAVELENGTH(A)


PROPID=2823 Y0O60109T (A-1) RED H57 1991.74
FOS APERTURE CORRECTIONS FOR POINT SOURCES
1.0
0.8
0.6
0.4
0.2
0.0
Y0O6511TT (C-1U): 0.68704 -2.39802e-05 2.42085e-09
Y0O65114T (C-1L): 0.58841 1.13666e-05 -7.04486e-10 {OFFSET=-0.300000}


PROPID=2823 Y0O60109T (A-1) RED H57 1991.74
FOS APERTURE CORRECTIONS FOR POINT SOURCES
1.0
0.8
0.6
0.4
0.2
0.0
Y0O6511LT (A-2U): 0.42444 1.01918e-05 -5.32148e-10 {OFFSET=0.300000}
Y0O6510WT (A-2L): 0.38704 2.25977e-05 -1.54415e-09
5000
5500
6000
6500
WAVELENGTH(A)


PROPID=2823 Y0O60109T (A-1) RED H57 1991.74
FOS APERTURE CORRECTIONS FOR POINT SOURCES
Y0O6511DT (A-3U): 0.16036 5.60301e-05 -5.46219e-09 {OFFSET=0.300000}
Y0O6510OT (A-3L): 0.16804 5.43422e-05 -5.40313e-09
0.0
0.2
0.4
0.6
0.8
1.0
5000
5500
6000
6500


PROPID=5048 Y1N1010IT (A-1) BLUE L15 1993.89
FOS APERTURE CORRECTIONS FOR POINT SOURCES
Y1N1010KT (C-1U): 0.50537 1.80159e-04 -5.42547e-08
Y1N1010LT (C-1L): 0.59586 4.57976e-05 -9.90078e-09 {OFFSET=-0.300000}
0.0
0.2
0.4
0.6
0.8
1.0
1200
1400
1600
1800
2000
2200
2400
WAVELENGTH(A)