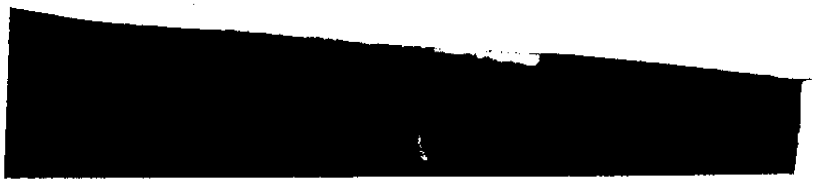

#358

Hubble Space Telescope

Early Release HRS/FOS Observations

90-037B-02A
90-037B-03A

Early Release with PC/WF Observations/
Early Release FOC Observations

90-037B-07A
90-037B-08A

Table of Contents

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1. INTRODUCTION:

The documentation for this data set was originally on paper, kept in NSSDC's Data Set Catalogs (DSCs). The paper documentation in the Data Set Catalogs have been made into digital images, and then collected into a single PDF file for each Data Set Catalog. The inventory information in these DSCs is current as of July 1, 2004. This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system. The information existing in the DSCs is now not needed for locating the data files, but we did not remove that inventory information.

The offline tape datasets have now been migrated from the original magnetic tape to Archival Information Packages (AIP's).

A prior restoration may have been done on data sets, if a requestor of this data set has questions; they should send an inquiry to the request office to see if additional information exists.

2. ERRATA/CHANGE LOG:

NOTE: Changes are made in a text box, and will show up that way when displayed on screen with a PDF reader.

When printing, special settings may be required to make the text box appear on the printed output.

Version	Date	Person	Page	Description of Change
01				
02				

3 LINKS TO RELEVANT INFORMATION IN THE ONLINE NSSDC INFORMATION SYSTEM:

http://nssdc.gsfc.nasa.gov/nmc/

[NOTE: This link will take you to the main page of the NSSDC Master Catalog. There you will be able to perform searches to find additional information]

4. CATALOG MATERIALS:

a. Associated Documents To find associated documents you will need to know the document ID number and then click here. http://nssdcftp.gsfc.nasa.gov/miscellaneous/documents/

b. Core Catalog Materials

Hubble Space Telescope

90-037B-02A ASUV-00011

90-037B-03A

Early Release HRS/FOS Observations

This dataset catalog consists of one 9-track, 6250 BPI, binary tape. The D and C number are as follows:

D#	C#	FILES
D-82735	C-27938	260

SPACE TELESCOPE SCIENCE INSTITUTE

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January 25, 1991

Dear Colleague,

Please find enclosed a magnetic tape containing some of the first spectroscopic observations obtained with the Faint Object Spectrograph and the Goddard High Resolution Spectrograph. These data were obtained by the Investigation Definition Teams during autumn 1990 as part of the Science Assessment and Early Release program. The FOS observations contain spectra of the standard star WD0501+527, which is useful for flat field purposes and to show the instrumental response, and observations of the central region of NGC1068. The GHRS observations are of three external targets, chi Per, M42, and alpha Tau, through both the small and large apertures, and will be useful for comparing resolution between apertures. These observations are only a small sample of the data obtained.

The data are being sent on magnetic tape to General Observers who were awarded time in Cycle 1 for programs which use the spectrographs and to GTOs with spectroscopic time. General Observers are reminded that all Cycle 1 programs are under review at the present time. Recipients of this magnetic tape should not distribute the data outside their own team without first checking with the Principal Investigators who are Richard Harms (FOS) and Jack Brandt (GHRS). Scientific investigations with these data are already underway by the IDTs. Please talk with the PIs or STScI Instrument Scientists (FOS: George Hartig and Anne Kinney; GHRS: Doug Duncan and Ron Gilliland) if you have any questions concerning the data. Bidushi Bhattacharya (FOS) and Laura Ferrarese (GHRS) provided the contents for this tape. The data are in FITS format.

You should bear in mind when inspecting the data that they are early observations, and not all the software bugs have been fixed nor all the calibration problems ironed out. In particular, many of the files used to calibrate the data are derived from ground observations some of which are know inappropriate. In other words: treat the data with care.

A listing of the contents of the tape is enclosed and plots of the data are provided. For the FOS, both unprocessed data and calibration pipeline products are provided. For the GHRS, we have included the results from adding FP SPLIT observations, in addition to the unprocessed and calibrated output.

Yours sincerely Chris Blades

SPACE TELESCOPE SCIENCE INSTITUTE

Sample FOS Data

DATASET	TARGET	SIZE	DETECTOR	APER	FILTER/GRATING
Y0CY0203T.*	WD0501+527	[2064,1]	AMBER	B-3	H27
Y0CY0205R.*	WD0501+527	[2064,5] ①	AMBER	B-3	H57
Y0CY0206R.*	WD0501+527	[2064,1]	AMBER	B-3	H40
Y0DV0305T.*	NGC1068-NUC	[2064,1]	AMBER	B-2	H27
Y0DV0306T.*	NGC1068-NUC	[2064,1]	AMBER	B-2	H57
Y0DV0307T.*	Int. Cal. Lamp	[2064,1]	AMBER	B-2	H57
Y0DV0308T.*	NGC1068-NUC	[2064,1]	AMBER	B-2	H40

FILETYPES: ②

RAW -- .d0h & .d0d - uncalibrated science data
.q0h & .q0d - data quality file
.shh & .shd - science header line
.ulh & .uld - unique data log
.trl - trailer file (ASCII)

CALIBRATED -- .c0h & .c0d - wavelength (wavelength vs. pixel)
.c1h & .c1h - calibrated flux (flux vx. pixel)
.c2h & .c2h - propagated statistical error
.c4h & .c4h - count rate
.c5h & .c5h - flat-fielded object spectrum (generic flat fields used)
.c7h & .c7d - background spectrum (standard background spectrum used)
.cqh & .cqd - output data quality file

① - This observation contains 5 intermediate readouts because of long exposure time.

② - Header files are designated as y*.*h (ASCII) and data files are designated as y*.*d (binary).

Tape Directory of HST Early Release Data from GHRS and FOS

Position	Format	File Name	Object	Grating/Aperature
F [illegible]	001	FITS	averdd5106m_cvt.c0h	alpha Tau	Ech B/LSA
[illegible]LE	002	FITS	averdd5106m_cvt.c1h		
[illegible]LE	003	FITS	averdd510fm_cvt.c0h	alpha Tau	Ech B/SSA
FILE	004	FITS	averdd510fm_cvt.c1h		
FILE	005	FITS	averdd510kt_cvt.c0h	alpha Tau	G270M/SSA
FILE	006	FITS	averdd510kt_cvt.c1h		
FILE	007	FITS	fpsplitde0106t_cvt.c0h	xi Per	Ech A/LSA
FILE	008	FITS	fpsplitde0106t_cvt.c1h		
FILE	009	FITS	fpsplitde010jt_cvt.c0h	xi Per	Ech A/SSA
FILE	010	FITS	fpsplitde010jt_cvt.c1h		
FILE	011	FITS	fpsplitdz0209m_cvt.c0h	M42	G140L/LSA
FILE	012	FITS	fpsplitdz0209m_cvt.c1h		
FILE	013	FITS	fpsplitdz020ht_cvt.c0h	M42	G140L/SSA
FILE	014	FITS	fpsplitdz020ht_cvt.c1h		
FILE	015	FITS	grande0106t_cvt.hhh	xi Per	Ech A/LSA
FILE	016	FITS	grande010jt_cvt.hhh	xi Per	Ech A/SSA
FILE	017	FITS	grandz0209m_cvt.hhh	M42	G140L/LSA
FILE	018	FITS	grandz020ht_cvt.hhh	M42	G140L/SSA
FILE	019	FITS	y0cy0203t_cvt.c0h	WD0501+527	H27/B-3
FILE	020	FITS	y0cy0203t_cvt.c1h		
FILE	021	FITS	y0cy0203t_cvt.c2h		
FILE	022	FITS	y0cy0203t_cvt.c4h		
FILE	023	FITS	y0cy0203t_cvt.c5h		
FILE	024	FITS	y0cy0203t_cvt.c7h		
FILE	025	FITS	y0cy0203t_cvt.cqh		
F [illegible]	026	FITS	y0cy0203t_cvt.d0h		
F [illegible]	027	FITS	y0cy0203t_cvt.q0h		
F [illegible]LE	028	FITS	y0cy0203t_cvt.shh		
FILE	029	FITS	y0cy0203t_cvt.ulh		
FILE	030	FITS	y0cy0205r_cvt.c0h	WD0501+527	H57/B-3
FILE	031	FITS	y0cy0205r_cvt.c1h		
FILE	032	FITS	y0cy0205r_cvt.c2h		
FILE	033	FITS	y0cy0205r_cvt.c4h		
FILE	034	FITS	y0cy0205r_cvt.c5h		
FILE	035	FITS	y0cy0205r_cvt.c7h		
FILE	036	FITS	y0cy0205r_cvt.cqh		
FILE	037	FITS	y0cy0205r_cvt.d0h		
FILE	038	FITS	y0cy0205r_cvt.q0h		
FILE	039	FITS	y0cy0205r_cvt.shh		
FILE	040	FITS	y0cy0205r_cvt.ulh		
FILE	041	FITS	y0cy0206r_cvt.c0h	WD0501+527	H40/B-3
FILE	042	FITS	y0cy0206r_cvt.c1h		
FILE	043	FITS	y0cy0206r_cvt.c2h		
FILE	044	FITS	y0cy0206r_cvt.c4h		
FILE	045	FITS	y0cy0206r_cvt.c5h		
FILE	046	FITS	y0cy0206r_cvt.c7h		
FILE	047	FITS	y0cy0206r_cvt.cqh		
FILE	048	FITS	y0cy0206r_cvt.d0h		
FILE	049	FITS	y0cy0206r_cvt.q0h		
FILE	050	FITS	y0cy0206r_cvt.shh		
F [illegible]	051	FITS	y0cy0206r_cvt.ulh		
F [illegible]	052	FITS	y0dv0305t_cvt.c0h	NGC1068-NUC	H27/B-2
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FILE	Ø57	FITS	yØdvØ3Ø5t_cvt.c7h		
FILE	Ø58	FITS	yØdvØ3Ø5t_cvt.cqh		
FILE	Ø59	FITS	yØdvØ3Ø5t_cvt.dØh		
FILE	Ø6Ø	FITS	yØdvØ3Ø5t_cvt.qØh		
FILE	Ø61	FITS	yØdvØ3Ø5t_cvt.shh		
FILE	Ø62	FITS	yØdvØ3Ø5t_cvt.ulh		
FILE	Ø63	FITS	yØdvØ3Ø6t_cvt.cØh	NGC1Ø68-NUC	H57/B-2
FILE	Ø64	FITS	yØdvØ3Ø6t_cvt.c1h		
FILE	Ø65	FITS	yØdvØ3Ø6t_cvt.c2h		
FILE	Ø66	FITS	yØdvØ3Ø6t_cvt.c4h		
FILE	Ø67	FITS	yØdvØ3Ø6t_cvt.c5h		
FILE	Ø68	FITS	yØdvØ3Ø6t_cvt.c7h		
FILE	Ø69	FITS	yØdvØ3Ø6t_cvt.cqh		
FILE	Ø7Ø	FITS	yØdvØ3Ø6t_cvt.dØh		
FILE	Ø71	FITS	yØdvØ3Ø6t_cvt.qØh		
FILE	Ø72	FITS	yØdvØ3Ø6t_cvt.shh		
FILE	Ø73	FITS	yØdvØ3Ø6t_cvt.ulh		
FILE	Ø74	FITS	yØdvØ3Ø7t_cvt.cØh	Int. Cal. Lamp	H57/B-2
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FILE	Ø76	FITS	yØdvØ3Ø7t_cvt.c2h		
FILE	Ø77	FITS	yØdvØ3Ø7t_cvt.c4h		
FILE	Ø78	FITS	yØdvØ3Ø7t_cvt.c5h		
FILE	Ø79	FITS	yØdvØ3Ø7t_cvt.c7h		
FILE	Ø8Ø	FITS	yØdvØ3Ø7t_cvt.cqh		
FILE	Ø81	FITS	yØdvØ3Ø7t_cvt.dØh		
FILE	Ø82	FITS	yØdvØ3Ø7t_cvt.qØh		
FILE	Ø83	FITS	yØdvØ3Ø7t_cvt.shh		
FILE	Ø84	FITS	yØdvØ3Ø7t_cvt.ulh		
FILE	Ø85	FITS	yØdvØ3Ø8t_cvt.cØh	NGC1Ø68-NUC	H4Ø/B-2
FILE	Ø86	FITS	yØdvØ3Ø8t_cvt.c1h		
FILE	Ø87	FITS	yØdvØ3Ø8t_cvt.c2h		
FILE	Ø88	FITS	yØdvØ3Ø8t_cvt.c4h		
FILE	Ø89	FITS	yØdvØ3Ø8t_cvt.c5h		
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FILE	Ø91	FITS	yØdvØ3Ø8t_cvt.cqh		
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FILE	Ø95	FITS	yØdvØ3Ø8t_cvt.ulh		
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FILE	1Ø6	FITS	zØdd5106m_cvt.xØh		
FILE	1Ø7	FITS	zØdd5106m_cvt.xqh		
FILE	1Ø8	FITS	zØdd5108m_cvt.cØh	alpha Tau	G27ØM/LSA
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FILE	11Ø	FITS	zØdd5108m_cvt.c2h		
FILE	111	FITS	zØdd5108m_cvt.c3h		
FILE	112	FITS	zØdd5108m_cvt.c4h		
FILE	113	FITS	zØdd5108m_cvt.cqh		

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FILE	115	FITS	z0dd5108m_cvt.q0h		
FILE	116	FITS	z0dd5108m_cvt.shh		
FILE	117	FITS	z0dd5108m_cvt.ulh		
FILE	118	FITS	z0dd5108m_cvt.x0h		
FILE	119	FITS	z0dd5108m_cvt.xqh		
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FILE	126	FITS	z0dd510dm_cvt.d0h		
FILE	127	FITS	z0dd510dm_cvt.q0h		
FILE	128	FITS	z0dd510dm_cvt.shh		
FILE	129	FITS	z0dd510dm_cvt.ulh		
FILE	130	FITS	z0dd510dm_cvt.x0h		
FILE	131	FITS	z0dd510dm_cvt.xqh		
FILE	132	FITS	z0dd510fm_cvt.c0h	alpha Tau	Ech B/SSA
FILE	133	FITS	z0dd510fm_cvt.c1h		
FILE	134	FITS	z0dd510fm_cvt.c2h		
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FILE	138	FITS	z0dd510fm_cvt.d0h		
FILE	139	FITS	z0dd510fm_cvt.q0h		
FILE	140	FITS	z0dd510fm_cvt.shh		
FILE	141	FITS	z0dd510fm_cvt.ulh		
FILE	142	FITS	z0dd510fm_cvt.x0h		
FILE	143	FITS	z0dd510fm_cvt.xqh		
FILE	144	FITS	z0dd510jt_cvt.c0h	Int. Cal. Lamp	G270M/SC1
FILE	145	FITS	z0dd510jt_cvt.c1h		
FILE	146	FITS	z0dd510jt_cvt.c2h		
FILE	147	FITS	z0dd510jt_cvt.c3h		
FILE	148	FITS	z0dd510jt_cvt.c4h		
FILE	149	FITS	z0dd510jt_cvt.cqh		
FILE	150	FITS	z0dd510jt_cvt.d0h		
FILE	151	FITS	z0dd510jt_cvt.q0h		
FILE	152	FITS	z0dd510jt_cvt.shh		
FILE	153	FITS	z0dd510jt_cvt.ulh		
FILE	154	FITS	z0dd510jt_cvt.x0h		
FILE	155	FITS	z0dd510jt_cvt.xqh		
FILE	156	FITS	z0dd510kt_cvt.c0h	alpha Tau	G270M/SSA
FILE	157	FITS	z0dd510kt_cvt.c1h		
FILE	158	FITS	z0dd510kt_cvt.c2h		
FILE	159	FITS	z0dd510kt_cvt.c3h		
FILE	160	FITS	z0dd510kt_cvt.c4h		
FILE	161	FITS	z0dd510kt_cvt.cqh		
FILE	162	FITS	z0dd510kt_cvt.d0h		
FILE	163	FITS	z0dd510kt_cvt.q0h		
FILE	164	FITS	z0dd510kt_cvt.shh		
FILE	165	FITS	z0dd510kt_cvt.ulh		
FILE	166	FITS	z0dd510kt_cvt.x0h		
FILE	167	FITS	z0dd510kt_cvt.xqh		
FILE	168	FITS	z0de0106t_cvt.c0h	xi Per	Ech A/LSA
FILE	169	FITS	z0de0106t_cvt.c1h		
FILE	170	FITS	z0de0106t_cvt.c2h		
FILE	171	FITS	z0de0106t_cvt.c3h		
FILE	172	FITS	z0de0106t_cvt.c4h		
FILE	173	FITS	z0de0106t_cvt.cqh		

FILE	174	FITS	z0de0106t_cvt.d0h		
FILE	175	FITS	z0de0106t_cvt.q0h		
FILE	176	FITS	z0de0106t_cvt.shh		
FILE	177	FITS	z0de0106t_cvt.u1h		
FILE	178	FITS	z0de0106t_cvt.x0h		
FILE	179	FITS	z0de0106t_cvt.xqh		
FILE	180	FITS	z0de010jt_cvt.c0h	xi Per	Ech A/SSA
FILE	181	FITS	z0de010jt_cvt.c1h		
FILE	182	FITS	z0de010jt_cvt.c2h		
FILE	183	FITS	z0de010jt_cvt.c3h		
FILE	184	FITS	z0de010jt_cvt.c4h		
FILE	185	FITS	z0de010jt_cvt.cqh		
FILE	186	FITS	z0de010jt_cvt.d0h		
FILE	187	FITS	z0de010jt_cvt.q0h		
FILE	188	FITS	z0de010jt_cvt.shh		
FILE	189	FITS	z0de010jt_cvt.u1h		
FILE	190	FITS	z0de010jt_cvt.x0h		
FILE	191	FITS	z0de010jt_cvt.xqh		
FILE	192	FITS	z0dz0208t_cvt.c0h	Int. Cal. Lamp	G140L/SC2
FILE	193	FITS	z0dz0208t_cvt.c1h		
FILE	194	FITS	z0dz0208t_cvt.c2h		
FILE	195	FITS	z0dz0208t_cvt.c3h		
FILE	196	FITS	z0dz0208t_cvt.c4h		
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FILE	198	FITS	z0dz0208t_cvt.d0h		
FILE	199	FITS	z0dz0208t_cvt.q0h		
FILE	200	FITS	z0dz0208t_cvt.shh		
FILE	201	FITS	z0dz0208t_cvt.u1h		
FILE	202	FITS	z0dz0208t_cvt.x0h		
FILE	203	FITS	z0dz0208t_cvt.xqh		
FILE	204	FITS	z0dz0209m_cvt.c0h	M42	G140L/LSA
FILE	205	FITS	z0dz0209m_cvt.c1h		
FILE	206	FITS	z0dz0209m_cvt.c2h		
FILE	207	FITS	z0dz0209m_cvt.c3h		
FILE	208	FITS	z0dz0209m_cvt.c4h		
FILE	209	FITS	z0dz0209m_cvt.cqh		
FILE	210	FITS	z0dz0209m_cvt.d0h		
FILE	211	FITS	z0dz0209m_cvt.q0h		
FILE	212	FITS	z0dz0209m_cvt.shh		
FILE	213	FITS	z0dz0209m_cvt.u1h		
FILE	214	FITS	z0dz0209m_cvt.x0h		
FILE	215	FITS	z0dz0209m_cvt.xqh		
FILE	216	FITS	z0dz020gt_cvt.c0h	Int. Cal. Lamp	G140L/SC1
FILE	217	FITS	z0dz020gt_cvt.c1h		
FILE	218	FITS	z0dz020gt_cvt.c2h		
FILE	219	FITS	z0dz020gt_cvt.c3h		
FILE	220	FITS	z0dz020gt_cvt.c4h		
FILE	221	FITS	z0dz020gt_cvt.cqh		
FILE	222	FITS	z0dz020gt_cvt.d0h		
FILE	223	FITS	z0dz020gt_cvt.q0h		
FILE	224	FITS	z0dz020gt_cvt.shh		
FILE	225	FITS	z0dz020gt_cvt.u1h		
FILE	226	FITS	z0dz020gt_cvt.x0h		
FILE	227	FITS	z0dz020gt_cvt.xqh		
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FILE	230	FITS	z0dz020ht_cvt.c2h		
FILE	231	FITS	z0dz020ht_cvt.c3h		
FILE	232	FITS	z0dz020ht_cvt.c4h		

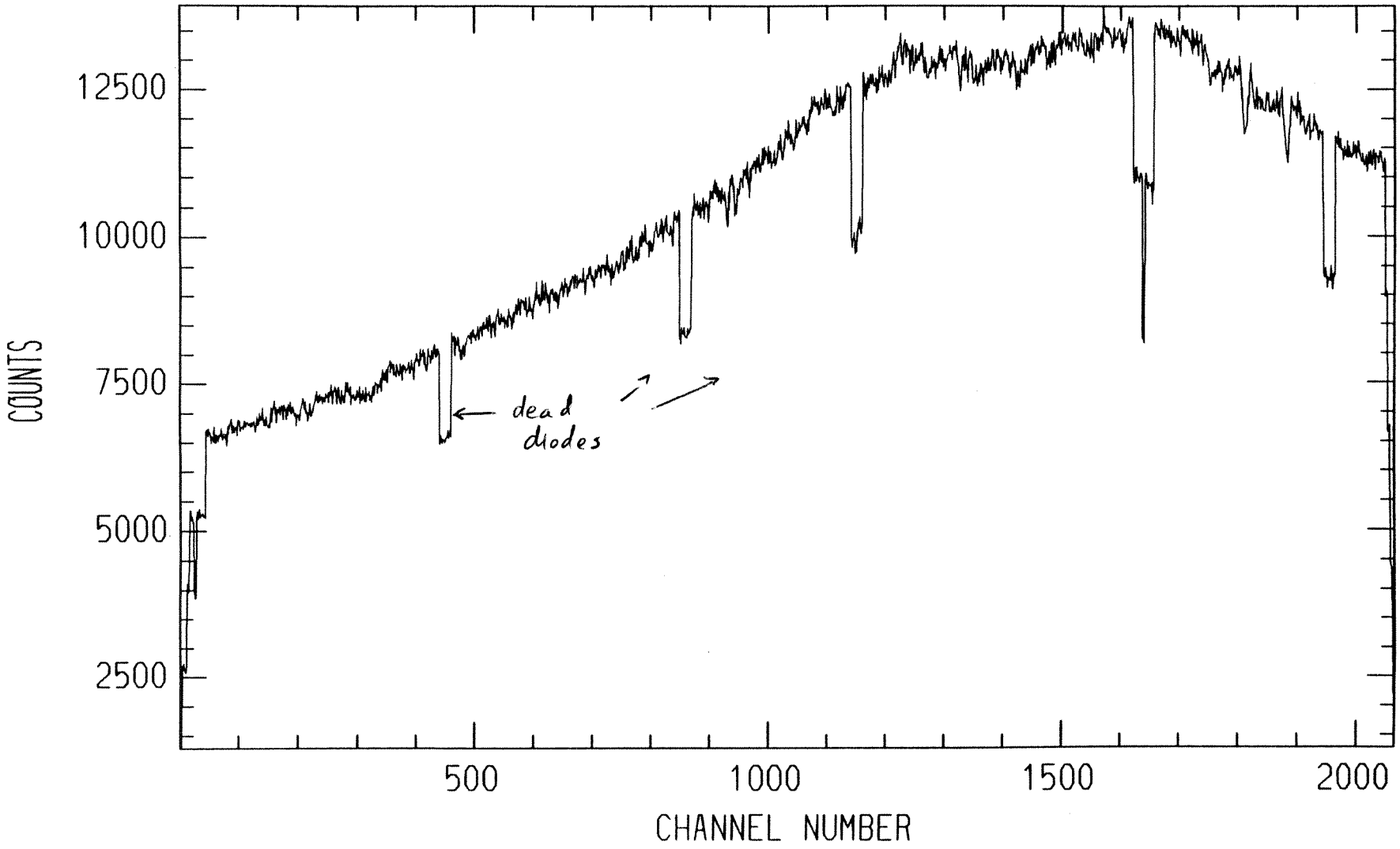
FILE	233	FITS	z0dz020ht_cvt.cqh		
FILE	234	FITS	z0dz020ht_cvt.d0h		
FILE	235	FITS	z0dz020ht_cvt.q0h		
FILE	236	FITS	z0dz020ht_cvt.shh		
FILE	237	FITS	z0dz020ht_cvt.ulh		
FILE	238	FITS	z0dz020ht_cvt.x0h		
FILE	239	FITS	z0dz020ht_cvt.xqh		
FILE	240	FITS	fos.trl		
FILE	241	FITS	hrs.trl		
FILE	242	FITS	y0cy0203t.trl	WD0501+527	H27/B-3
FILE	243	FITS	y0cy0205r.trl	WD0501+527	H57/B-3
FILE	244	FITS	y0cy0206r.trl	WD0501+527	H40/B-3
FILE	245	FITS	y0dv0305t.trl	NGC1068-NUC	H27/B-2
FILE	246	FITS	y0dv0306t.trl	NGC1068-NUC	H57/B-2
FILE	247	FITS	y0dv0307t.trl	Int. Cal. Lamp	H57/B-2
FILE	248	FITS	y0dv0308t.trl	NGC1068-NUC	H40/B-2
FILE	249	FITS	z0dd5106m.trl	alpha Tau	Ech B/LSA
FILE	250	FITS	z0dd5108m.trl	alpha Tau	G270M/LSA
FILE	251	FITS	z0dd510dm.trl	Int. Cal. Lamp	Ech B/SC1
FILE	252	FITS	z0dd510fm.trl	alpha Tau	Ech B/SSA
FILE	253	FITS	z0dd510jt.trl	Int. Cal. Lamp	G270M/SC1
FILE	254	FITS	z0dd510kt.trl	alpha Tau	G270M/SSA
FILE	255	FITS	z0de0106t.trl	xi Per	Ech A/LSA
FILE	256	FITS	z0de010jt.trl	xi Per	Ech A/SSA
FILE	257	FITS	z0dz0208t.trl	Int. Cal. Lamp	G140L/SC2
FILE	258	FITS	z0dz0209m.trl	M42	G140L/LSA
FILE	259	FITS	z0dz020gt.trl	Int. Cal. Lamp	G140L/SC1
FILE	260	FITS	z0dz020ht.trl	M42	G140L/SSA

SPACE TELESCOPE SCIENCE INSTITUTE

OBSERVER = NARGON	DISPERSER = H27	Y BASE = 346
TARGET ID = 1318_2	POLARIZER = CLEAR	1ST CHANNEL = 0
TARGET RA = 05:05:30.6	EXPO/PIX = 42.5000	NUM CHANNELS = 512
TARGET DEC = 52:49:53.9	LIVETIME = 0.500000	COMB = 5
OBJ APERTURE = YR01_0	DEADTIME = 0.100000E-01	SUB-STEP = 4
SKY APERTURE =	INTS = 1	BINS = 1
POSN ANGLE = 336.899	PATTERNS = 17	Y-SIZE = 1
OBS DATE = 27-OCT-1990	READOUTS = 1	Y-SPACE = 0
OBS TIME = 12:17:11	MEM CLEARS = 1	SPECTRUM = 1
FILENAME = YOCT0203T.OOH	OBS MODE = SPECTROSCOPY	
DETECTOR = AMBER	X BASE = 1	

SPODPS@IRAF 27-OCT-90 23:09:23

FAINT OBJECT SPECTROGRAPH



SPACE TELESCOPE SCIENCE INSTITUTE

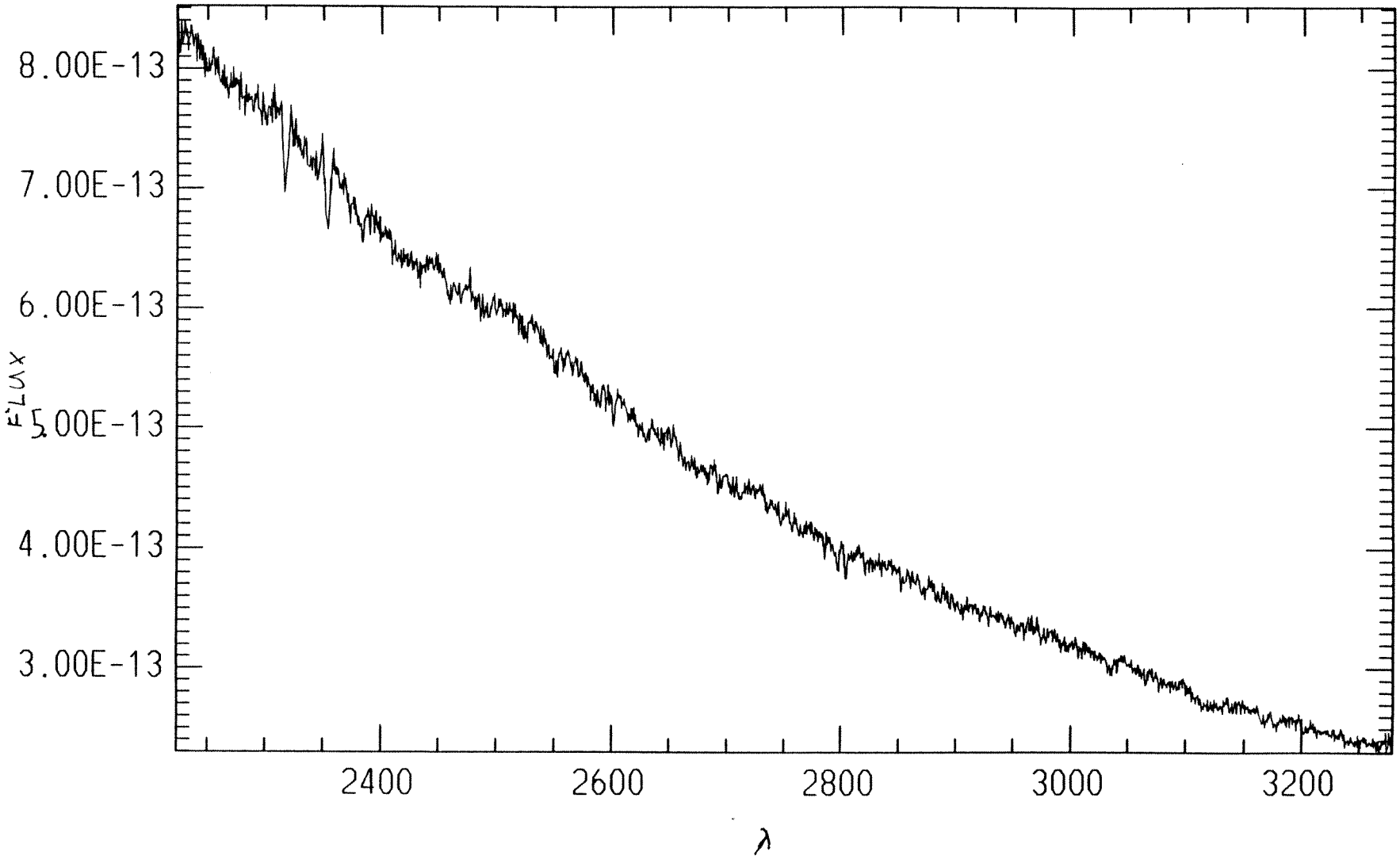
OBSERVER = MARGON
TARGET ID = 1318_2
TARGET RA = 05:05:30.6
TARGET DEC = 52:49:53.9
OBJ APERTURE = YB01_0
SKY APERTURE =
POSN ANGLE = 336.899
OBS DATE = 27-OCT-1990
OBS TIME = 12:17:11
FILENAME = Y0CY0203T.C1H
DETECTOR = AMBER

DISPERSER = H27
POLARIZER = CLEAR
EXPO/PIX = 42.5000
LIVETIME = 0.500000
DEADTIME = 0.100000E-01
INTS = 1
PATTERNS = 17
READOUTS = 1
MEM CLEARS = 1
OBS MODE = SPECTROSCOPY
X BASE = 1

Y BASE = 346
1ST CHANNEL = 0
NUM CHANNELS = 512
COMB = 5
SUB-STEP = 4
BINS = 1
Y-SIZE = 1
Y-SPACE = 0
SPECTRUM = 1

SPODPS@IRAF 27-OCT-90 23:15:26

FAINT OBJECT SPECTROGRAPH

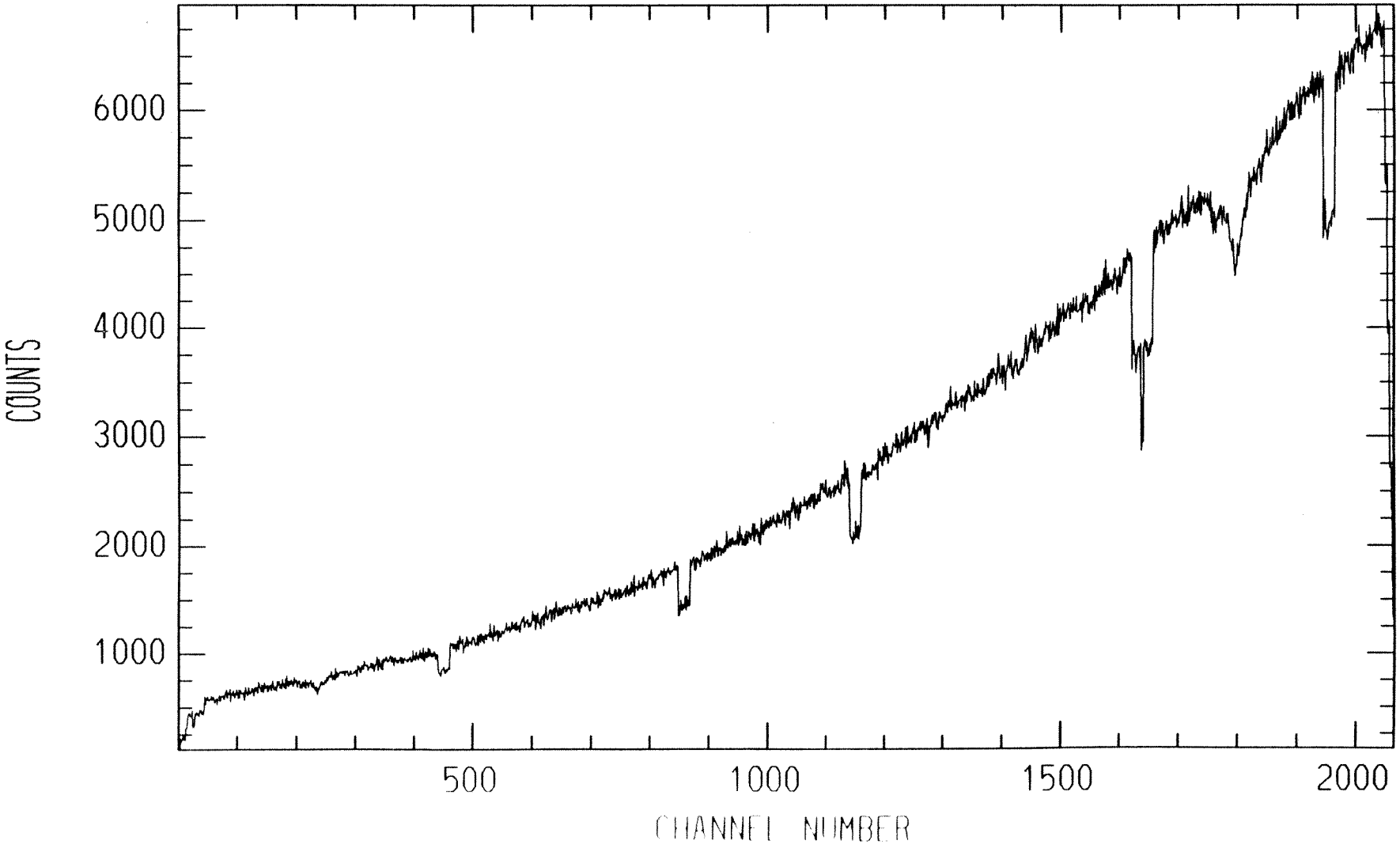


SPACE TELESCOPE SCIENCE INSTITUTE

OBSERVER	= MARGON	DISPERSER	= H57	Y BASE	= -500
TARGET ID	= 1318_2	POLARIZER	= CLEAR	1ST CHANNEL	= 0
TARGET RA	= 05:05:30.6	EXPO/PIX	= 325.000	NUM CHANNELS	= 512
TARGET DEC	= 52:49:53.9	LIVETIME	= 0.500000	COMB	= 5
OBJ APERTURE	= YRD1_0	DEADTIME	= 0.100000E-01	SUB-STEP	= 4
SKY APERTURE	=	INTS	= 1	BINS	= 1
POSN ANGLE	= 336.899	PATTERNS	= 26	Y-SIZE	= 1
OBS DATE	= 27-OCT-1990	READOUTS	= 5	Y-SPACE	= 0
OBS TIME	= 13:31:12	MEM CLEARS	= 1	SPECTRUM	= 1
FILENAME	= Y0CT0205R.DOH	OBS MODE	= SPECTROSCOPY		
DETECTOR	= AMBER	X BASE	= 1		

SPODPS@IRAF 27-OCT-90 23:11:00

FAINT OBJECT SPECTROGRAPH



SPACE TELESCOPE SCIENCE INSTITUTE

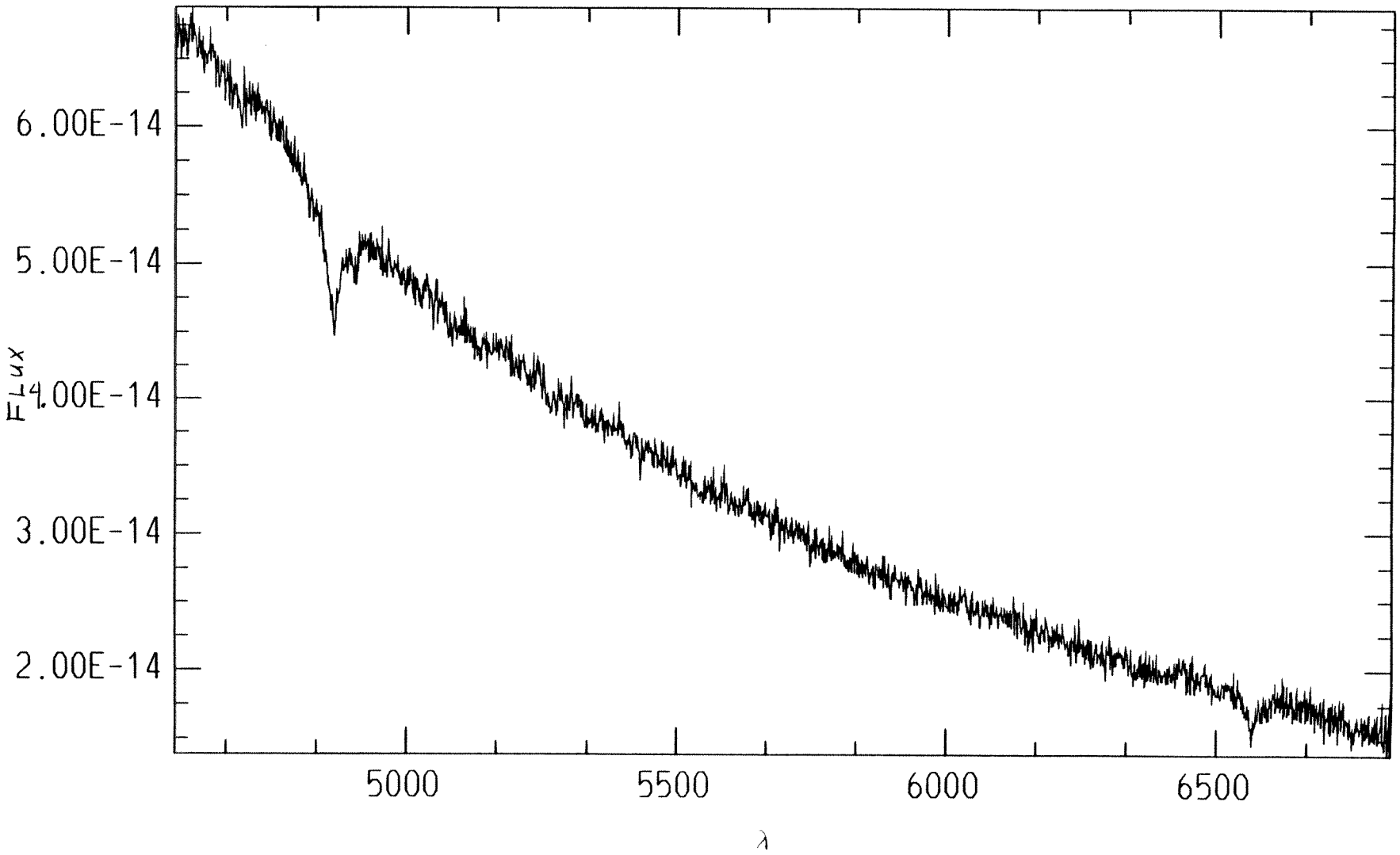
OBSERVER	MARGON
TARGET ID	1318_2
TARGET RA	05:05:30.6
TARGET DEC	52:49:53.9
OBJ APERTURE	YA01_0
SKY APERTURE	
POSN ANGLE	336.899
OBS DATE	27-OCT-1990
OBS TIME	13:31:12
FILENAME	Y0CT0205R.C1H
DETECTOR	AMBER

DISPERSER	H57
POLARIZER	CLEAR
EXPO/PIX	325.000
LIVETIME	0.500000
DEADTIME	0.100000E-01
INTS	1
PATTERNS	26
READOUTS	5
MEM CLEARS	1
OBS MODE	SPECTROSCOPY
X BASE	1

Y BASE	-500
1ST CHANNEL	0
NUM CHANNELS	512
COMB	5
SUB-STEP	4
BINS	1
Y-SIZE	1
Y-SPACE	0
SPECTRUM	1

SPODPS@IRAF 27-OCT-90 23:16:43

FAINT OBJECT SPECTROGRAPH



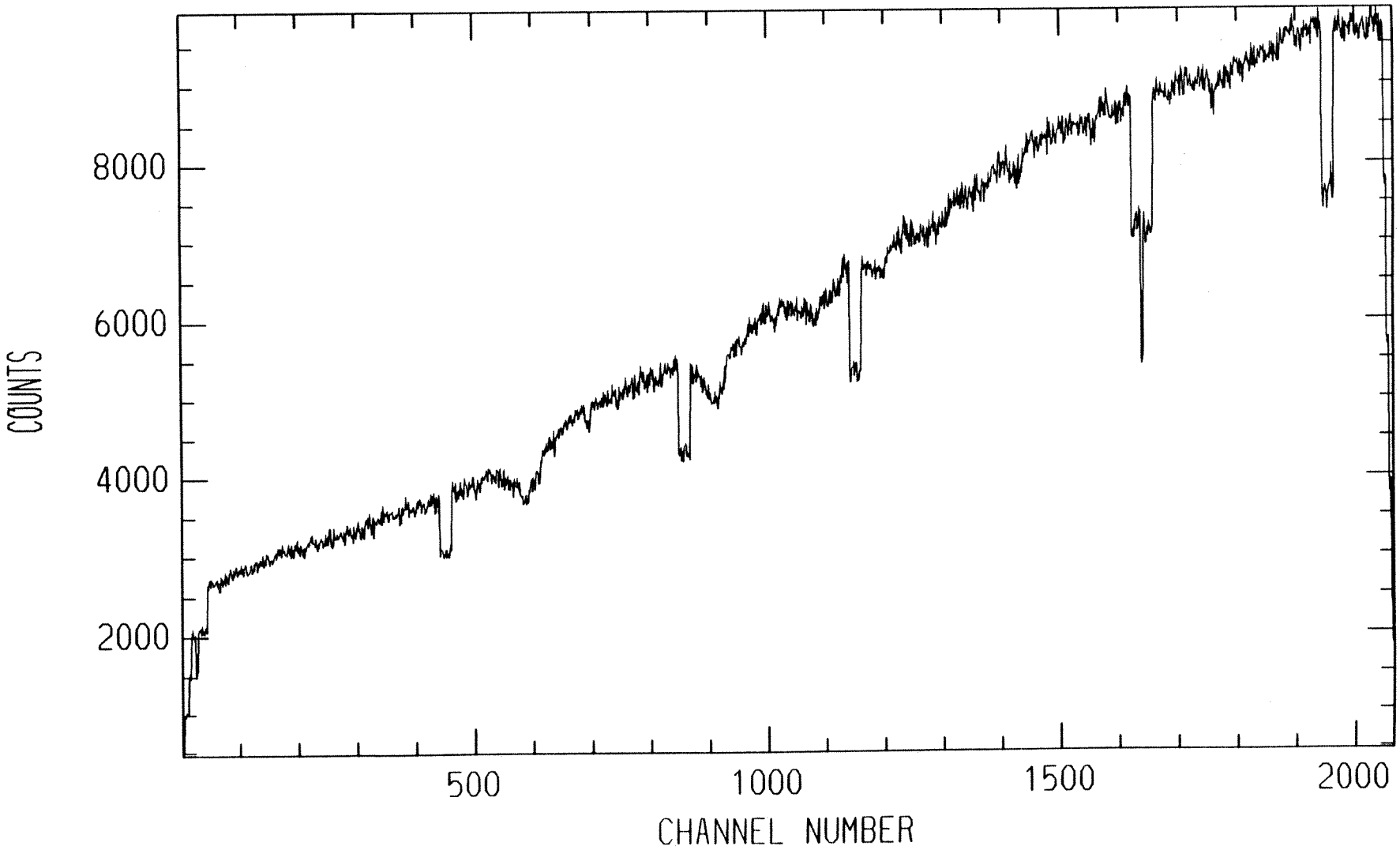
OBSERVER = MARGON
TARGET ID = 1318_2
TARGET RA = 05:05:30.6
TARGET DEC = 52:49:53.9
OBJ APERTURE = YR01_0
SKY APERTURE =
POSN ANGLE = 336.899
OBS DATE = 27-OCT-1990
OBS TIME = 13:59:46
FILENAME = YOCT0206R.DOH
DETECTOR = AMBER

DISPERSER = H19
POLARIZER = CLEAR
EXPO/PIX = 50.0000
LIVETIME = 0.500000
DEADTIME = 0.100000E-01
INTS = 1
PATTERNS = 20
READOUTS = 1
MEM CLEARS = 1
OBS MODE = SPECTROSCOPY
X BASE = 1

Y BASE = -400
1ST CHANNEL = 0
NUM CHANNELS = 512
COMB = 5
SUB-STEP = 4
BINS = 1
Y-SIZE = 1
Y-SPACE = 0
SPECTRUM = 1

SPODPS@IRAF 27-OCT-90 23:11:47

FAINT OBJECT SPECTROGRAPH



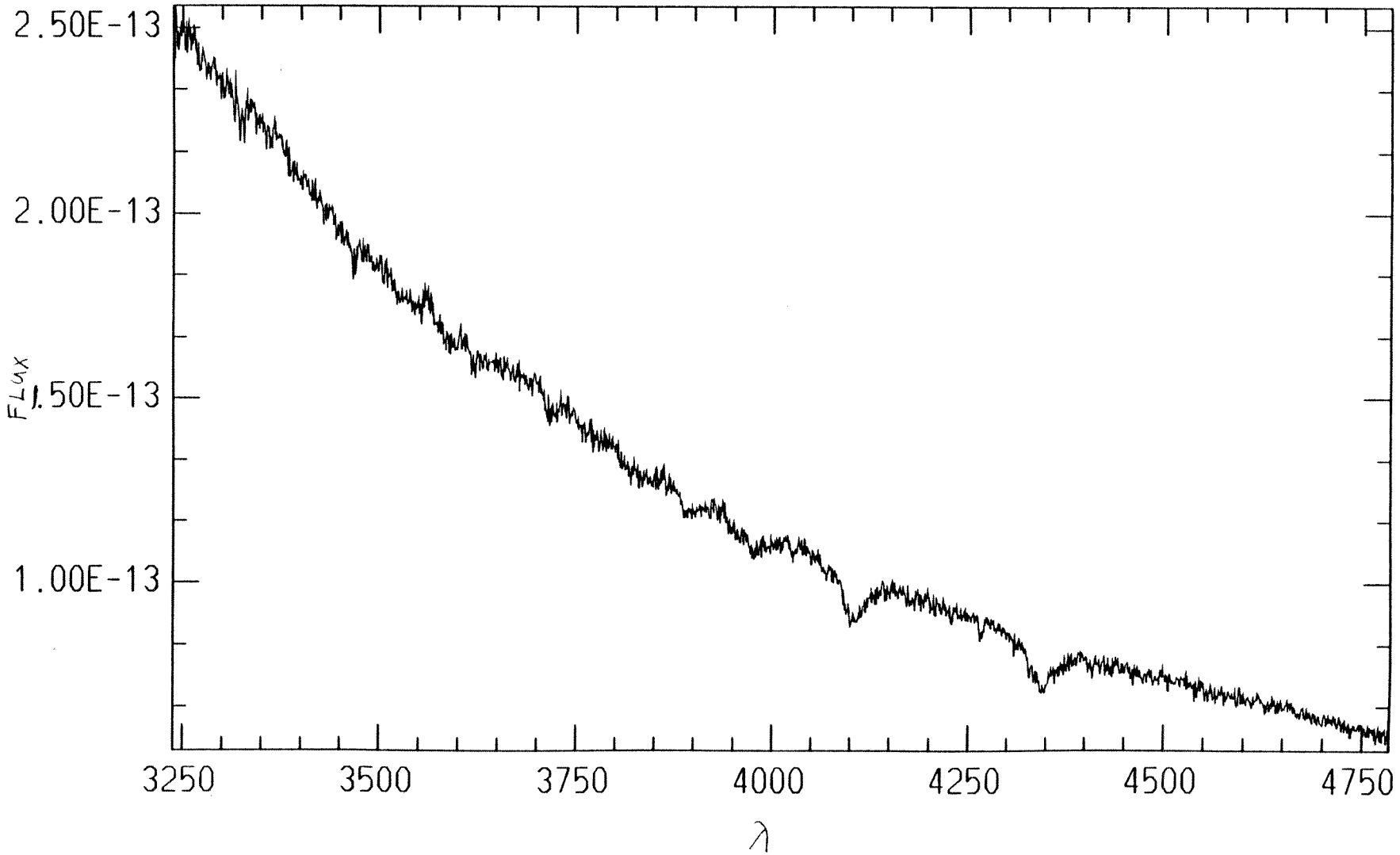
SPACE TELESCOPE SCIENCE INSTITUTE

OBSERVER	MARGON
TARGET ID	1318_2
TARGET RA	05:05:30.6
TARGET DEC	52:49:53.9
OBJ APERTURE	YA01_0
SKY APERTURE	
POSN ANGLE	336.899
OBS DATE	27-OCT-1990
OBS TIME	13:59:46
FILENAME	Y0CY0206R.C1H
DETECTOR	AMBER

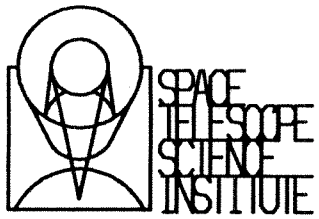
DISPERSER	H19
POLARIZER	CLEAR
EXPO/PIX	50.0000
LIVETIME	0.500000
DEADTIME	0.100000E-01
INTS	1
PATTERNS	20
READOUTS	1
MEM CLEARS	1
OBS MODE	SPECTROSCOPY
X BASE	1

Y BASE	-400
1ST CHANNEL	0
NUM CHANNELS	512
COMB	5
SUB-STEP	4
BINS	1
Y-SIZE	1
Y-SPACE	0
SPECTRUM	1

FAINT OBJECT SPECTROGRAPH



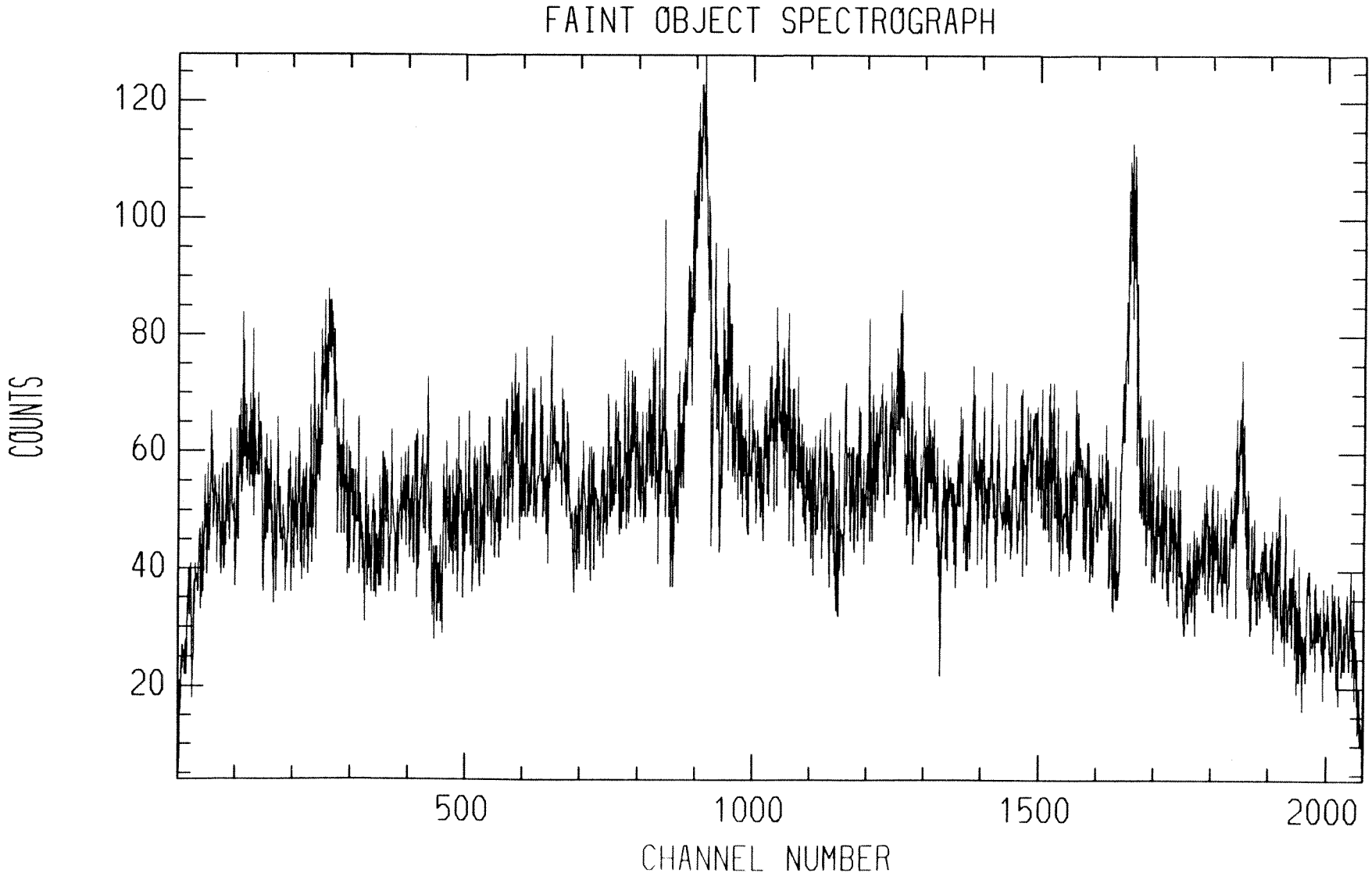
SPODPS@IRAF 27-OCT-90 23:17:20



OBSERVER = FORD
TARGET ID = 3075_2
TARGET RA = 02:42:40.6
TARGET DEC = - 0:00:48.6
OBJ APERTURE = YRDO_3
SKY APERTURE =
POSN ANGLE = 72.3617
OBS DATE = 29-OCT-1990
OBS TIME = 22:16:00
FILENAME = Y0DY0305T.DOH
DETECTOR = AMBER

DISPERSER = H27
POLARIZER = CLEAR
EXPO/PIX = 75.0000
LIVETIME = 0.500000
DEADTIME = 0.100000E-01
INTS = 1
PATTERNS = 30
READOUTS = 1
MEM CLEARS = 1
OBS MODE = SPECTROSCOPY
X BASE = 1

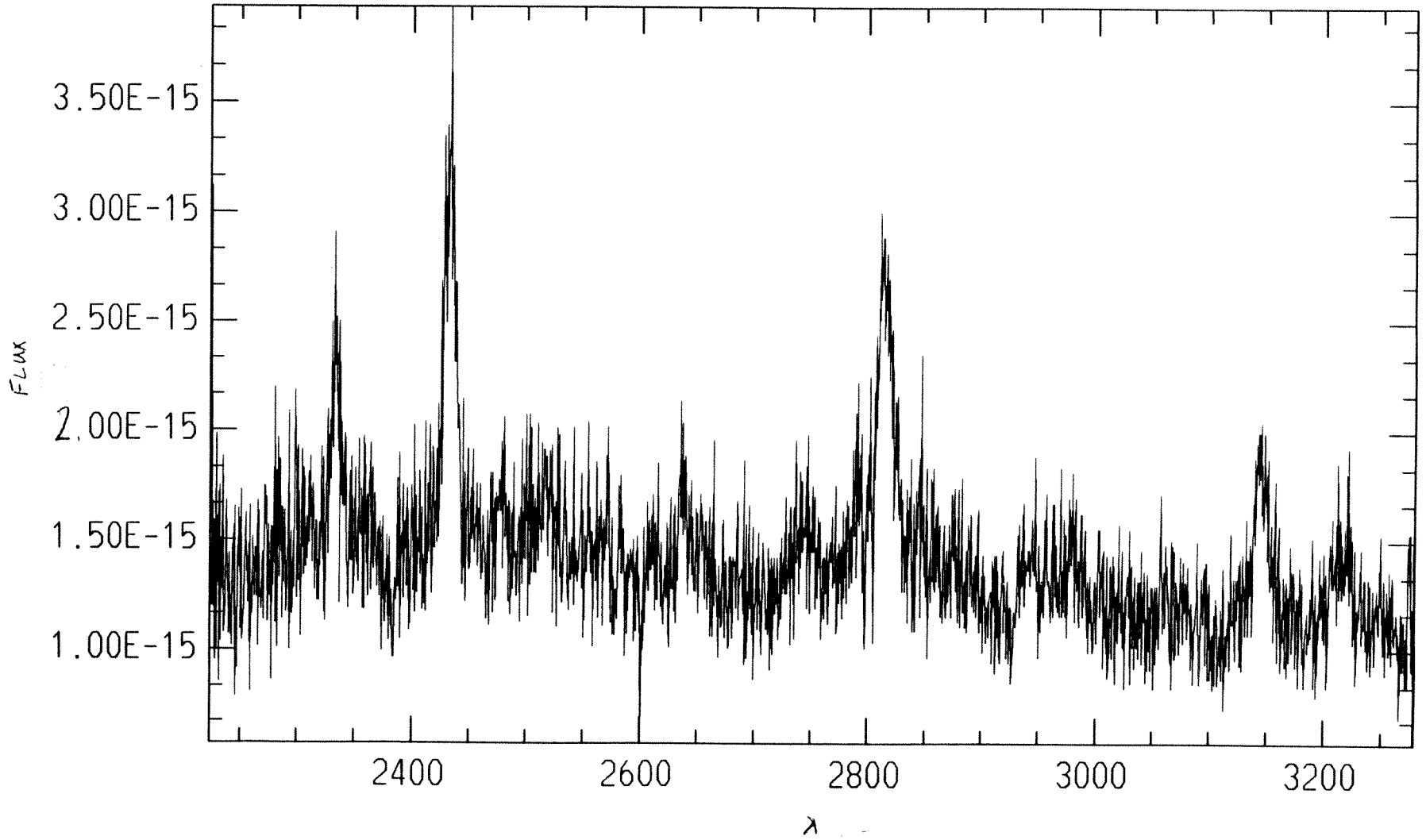
Y BASE = 346
1ST CHANNEL = 0
NUM CHANNELS = 512
COMB = 5
SUB-STEP = 4
BINS = 1
Y-SIZE = 1
Y-SPACE = 0
SPECTRUM = 1

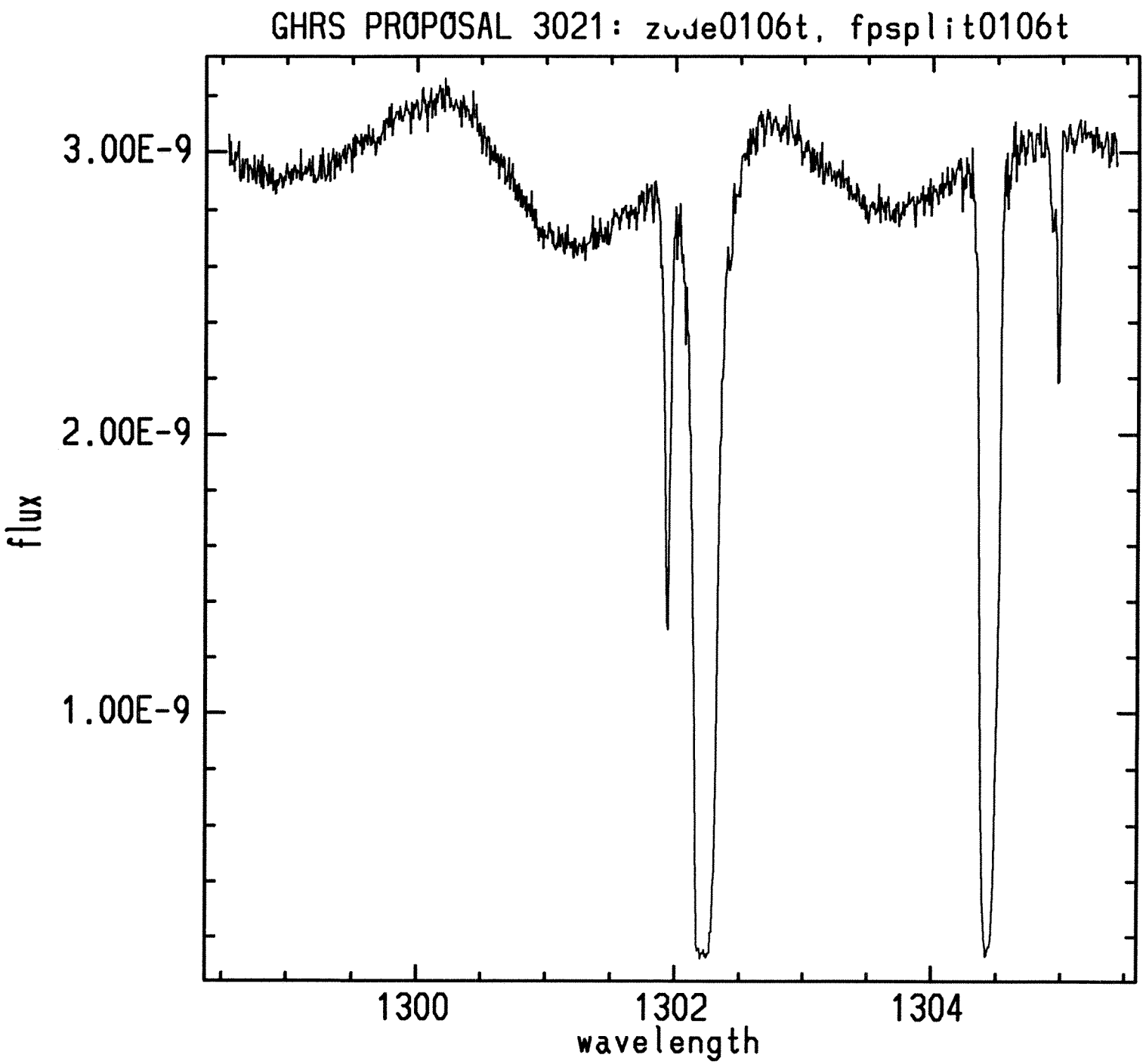


SPACE TELESCOPE SCIENCE INSTITUTE

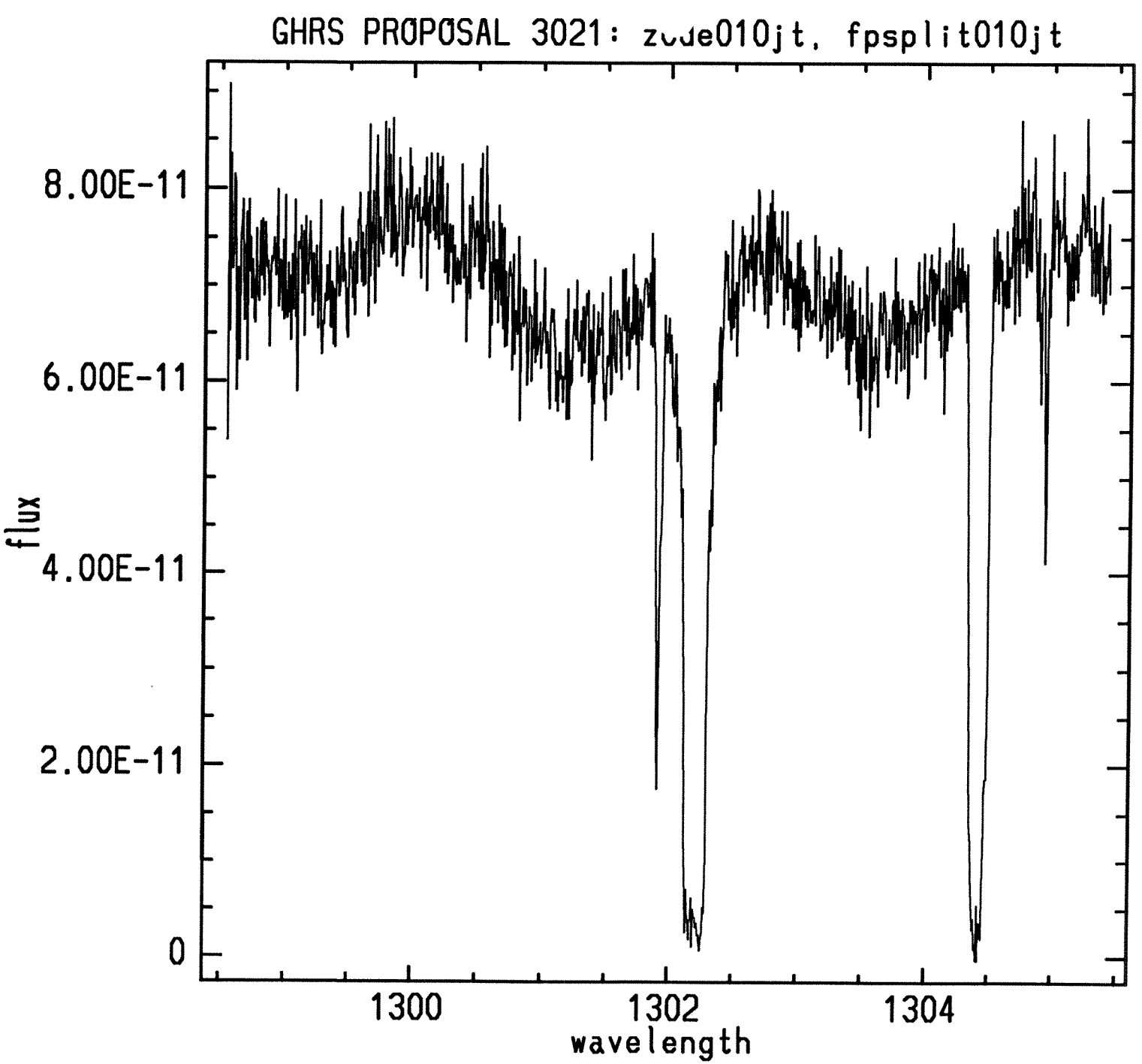
OBSERVER = FORD	DISPERSER = H27	Y BASE = 346
TARGET ID = 3075_2	POLARIZER = CLEAR	1ST CHANNEL = 0
TARGET RA = 02:42:40.6	EXPO/PIX = 75.0000	NUM CHANNELS = 512
TARGET DEC = - 0:00:48.6	LIVETIME = 0.500000	COMB = 5
OBJ APERTURE = YA00_3	DEADTIME = 0.100000E-01	SUB-STEP = 4
SKY APERTURE =	INTS = 1	BINS = 1
POSN ANGLE = 72.3617	PATTERNS = 30	Y-SIZE = 1
OBS DATE = 29-OCT-1990	READOUTS = 1	Y-SPACE = 0
OBS TIME = 22:16:00	MEM CLEARS = 1	SPECTRUM = 1
FILENAME = Y00Y0305T.C1H	OBS MODE = SPECTROSCOPY	
DETECTOR = AMBER	X BASE = 1	

FAINT OBJECT SPECTROGRAPH

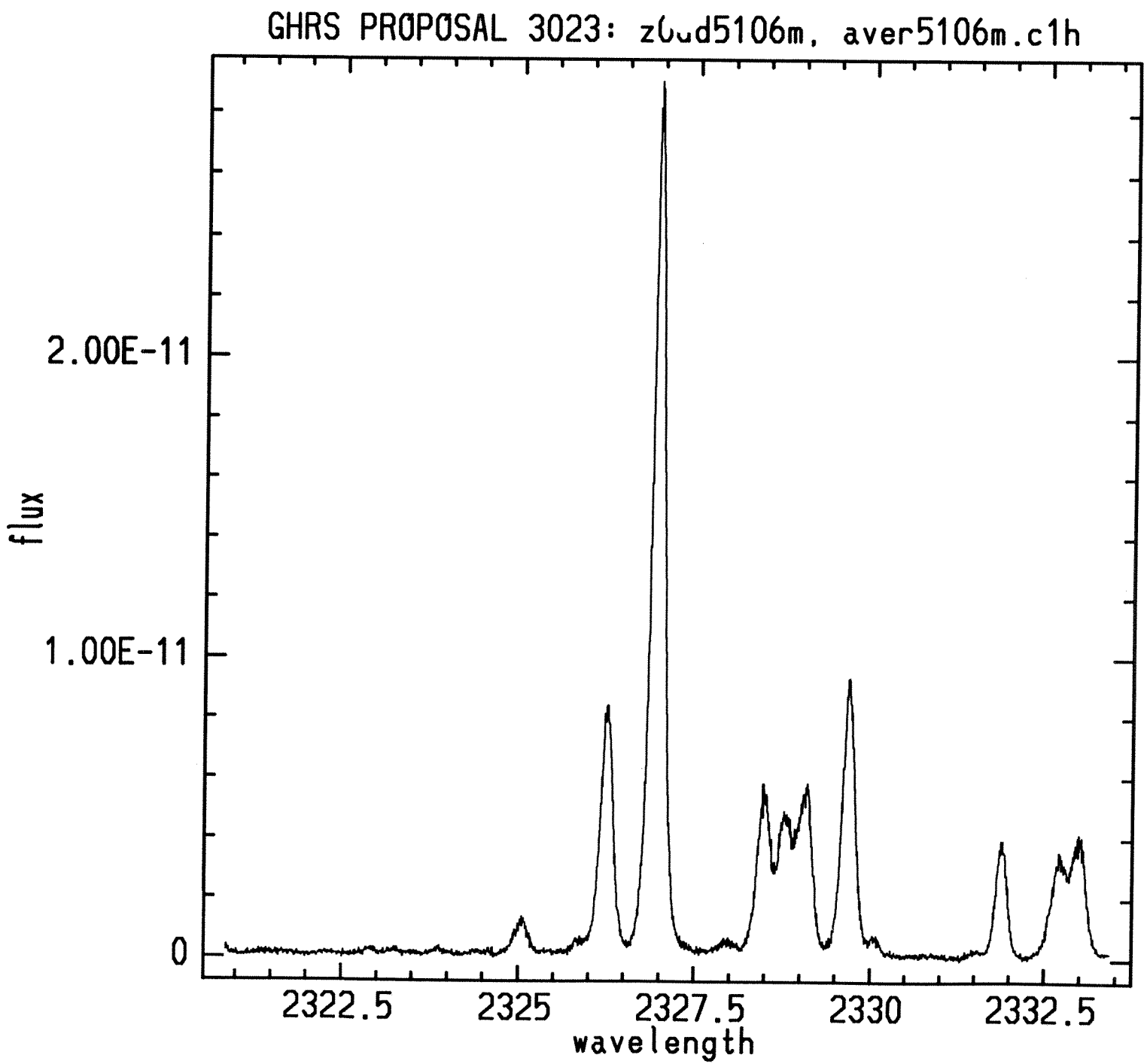




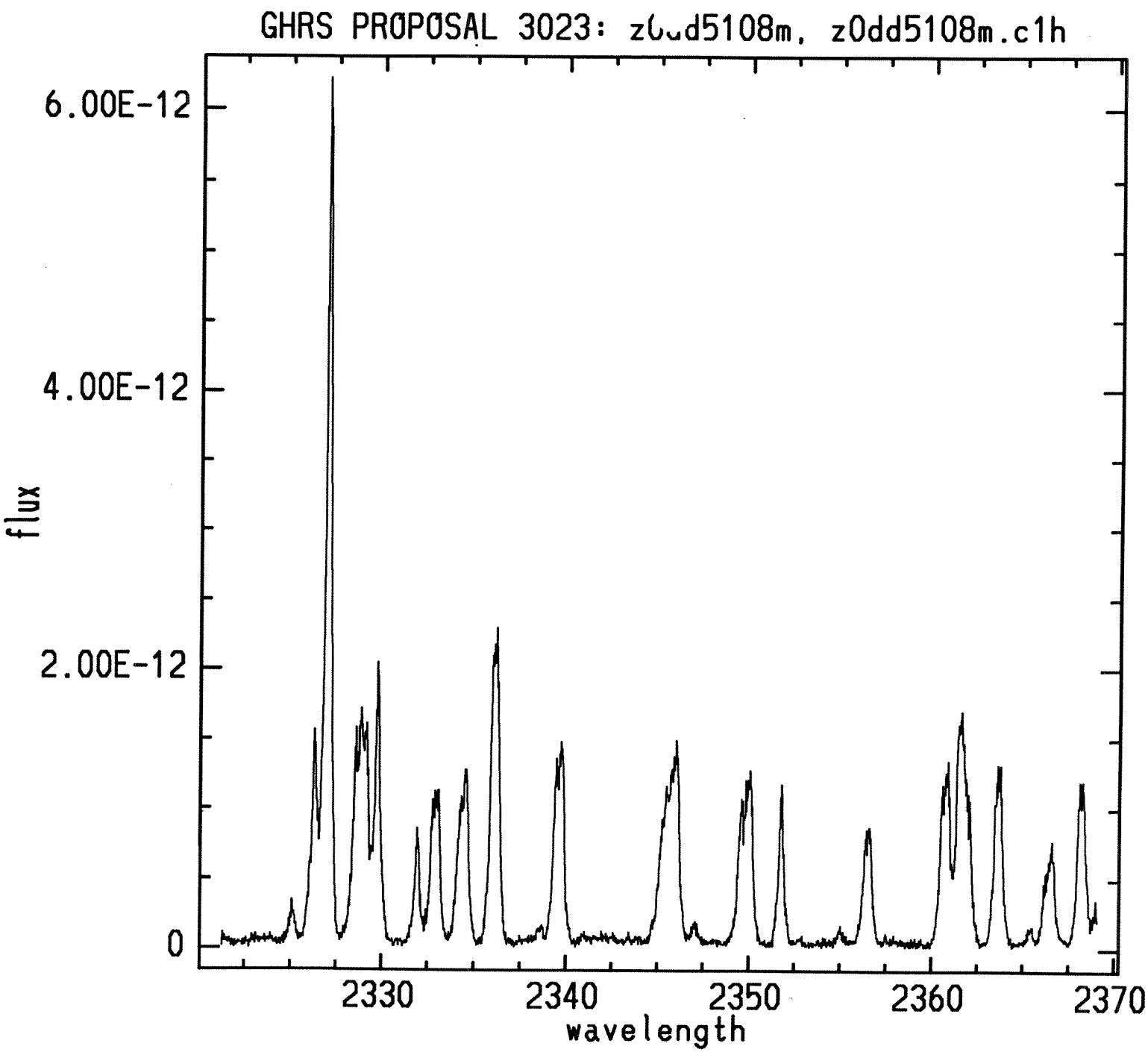
NOAO/IRAF kerman@mael.arsci.edu Fri Dec 7 15:11:32 1990



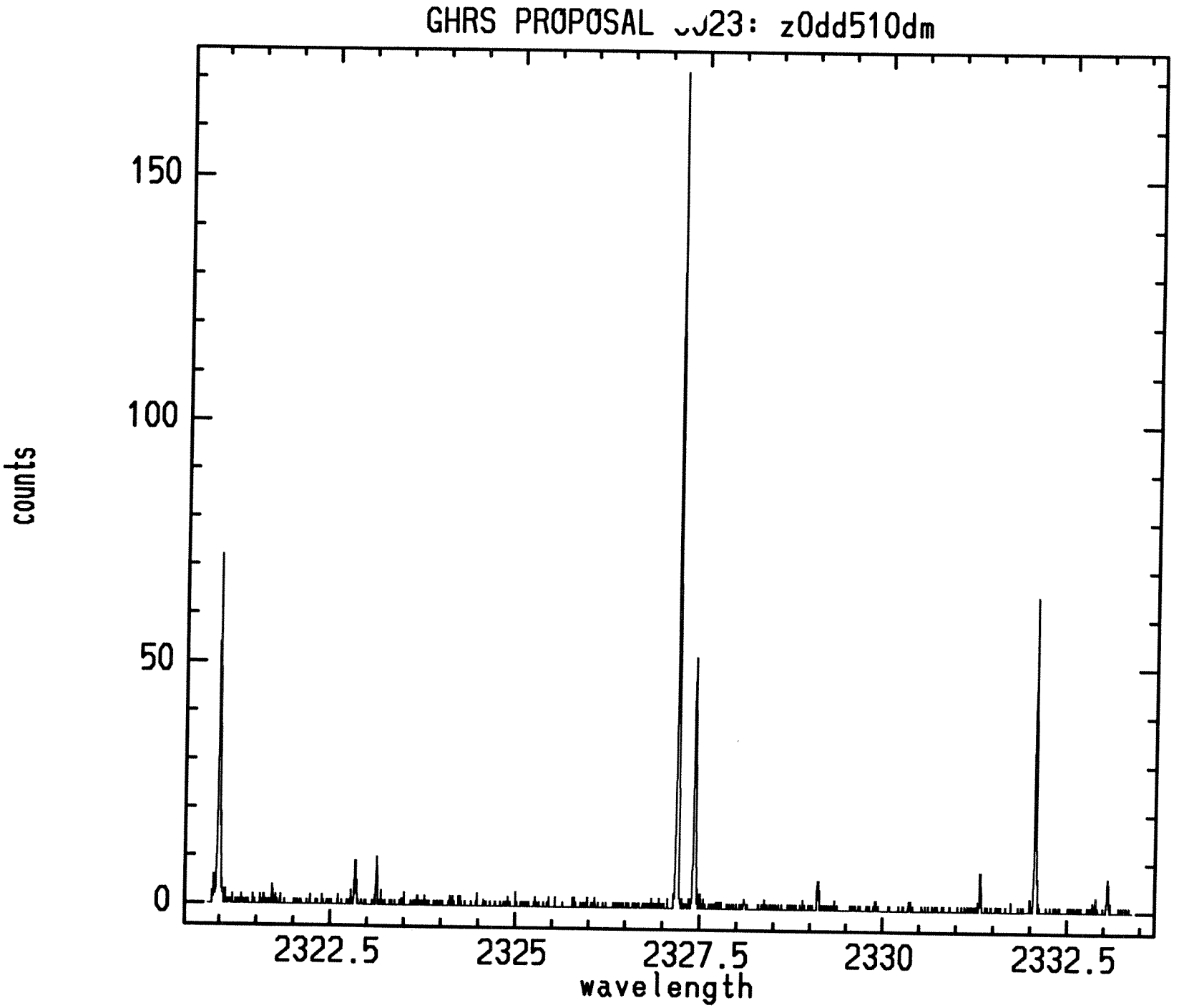
NOAO/IRAF lferrar@maxel.stsci.edu Fri Dec 7 15:22:37 1990



NOAO/IRAF kerman@maeil.noao.edu Fri Dec 7 16:39:06 1990

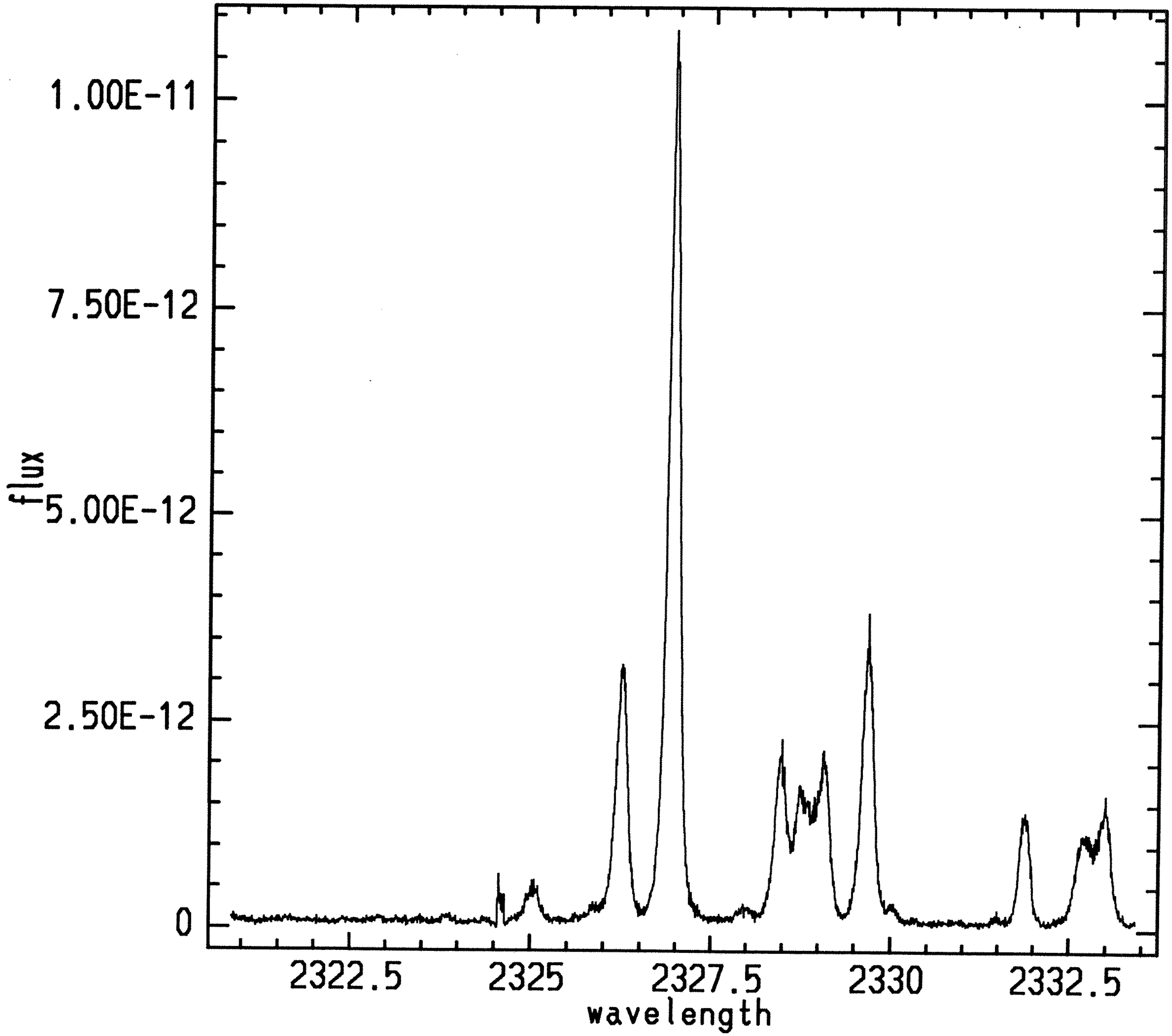


NOAO/IRAF lferrar@zeus.aasc.edu Fri Dec 7 16:41:40 1990

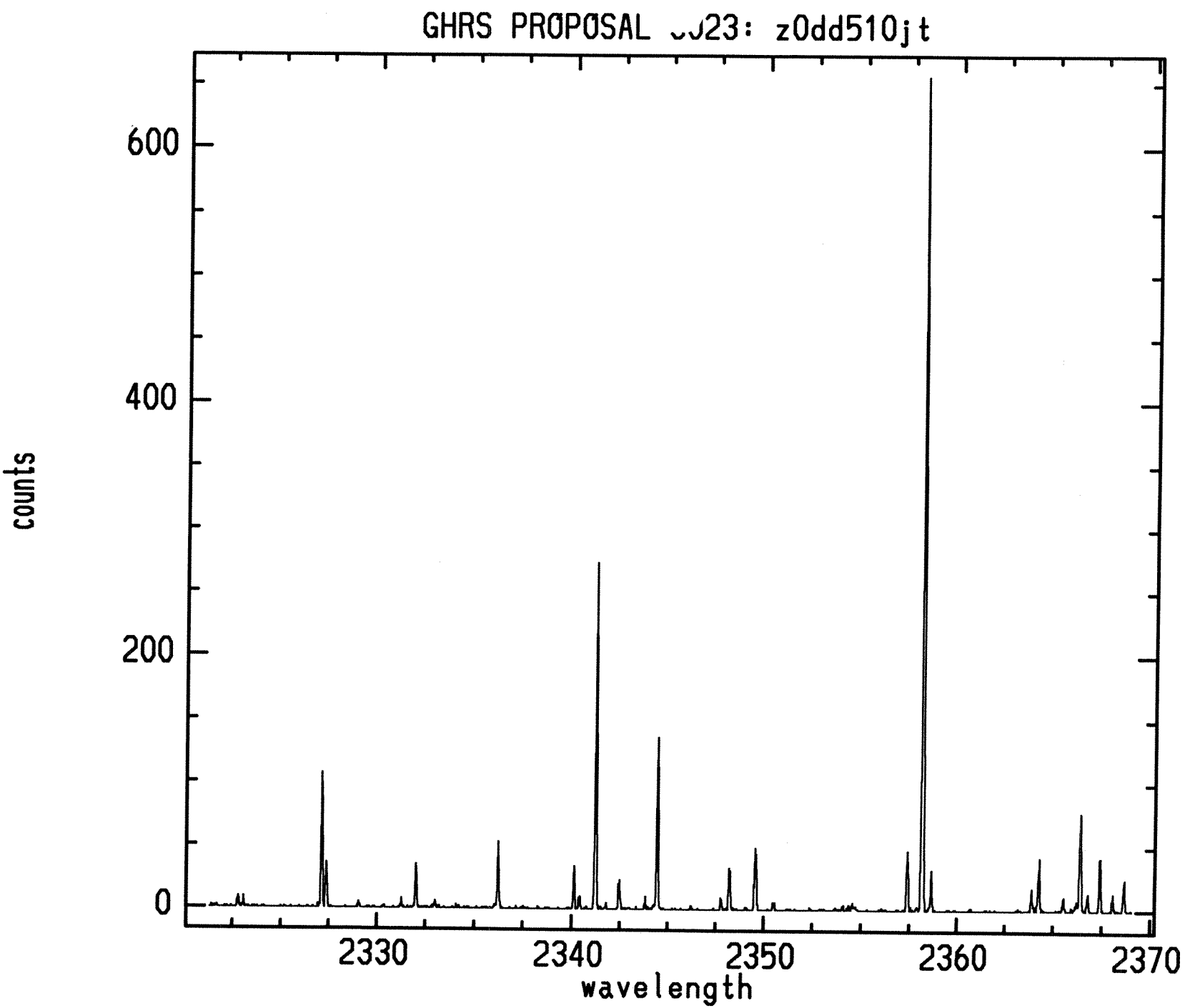


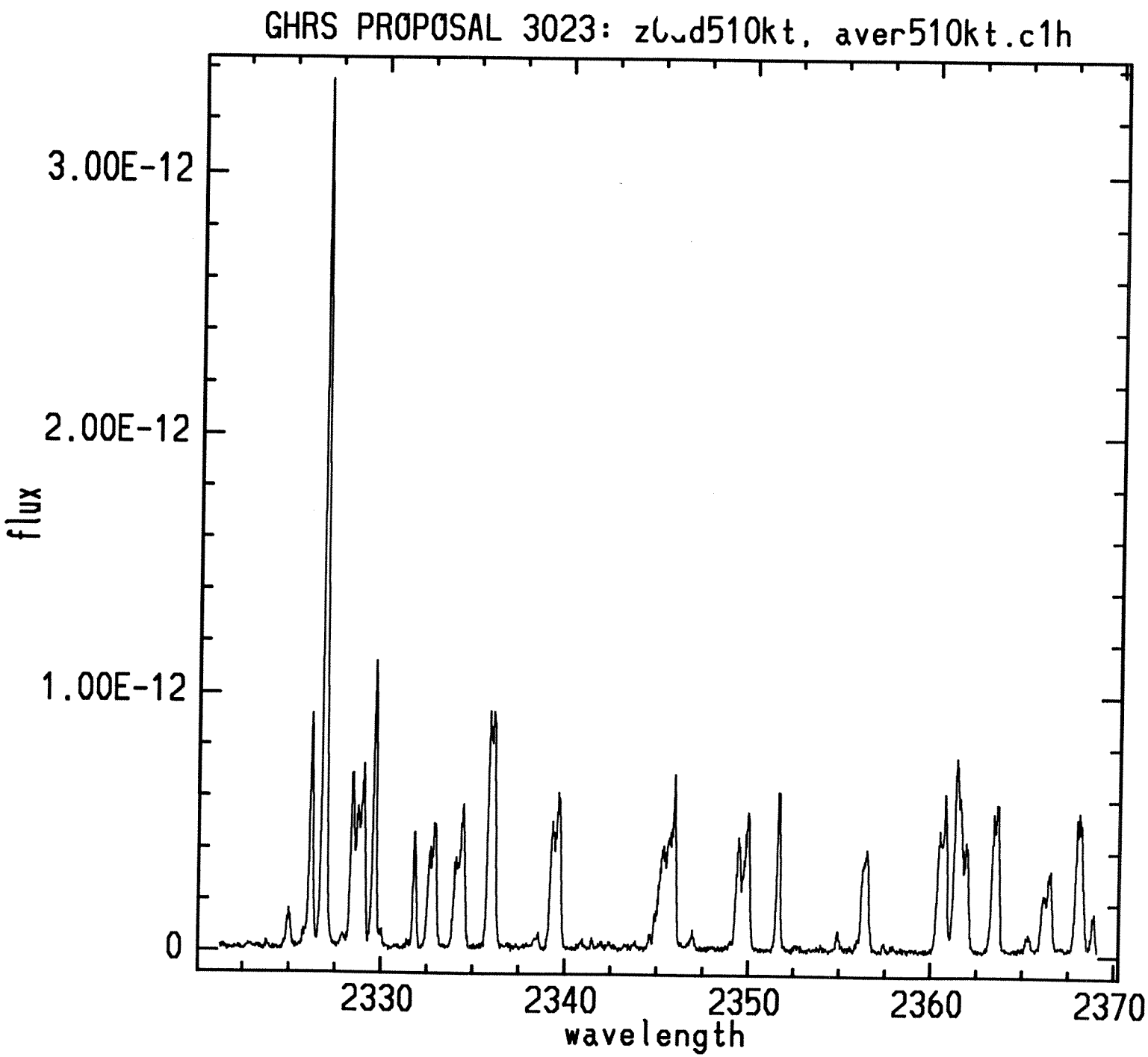
NOAO/IRAF lferrar@stsci.edu Tue Jan 15 15:39:27 1991

GHRS PROPOSAL 3023: z[illegible]d510fm, aver510fm.c1h

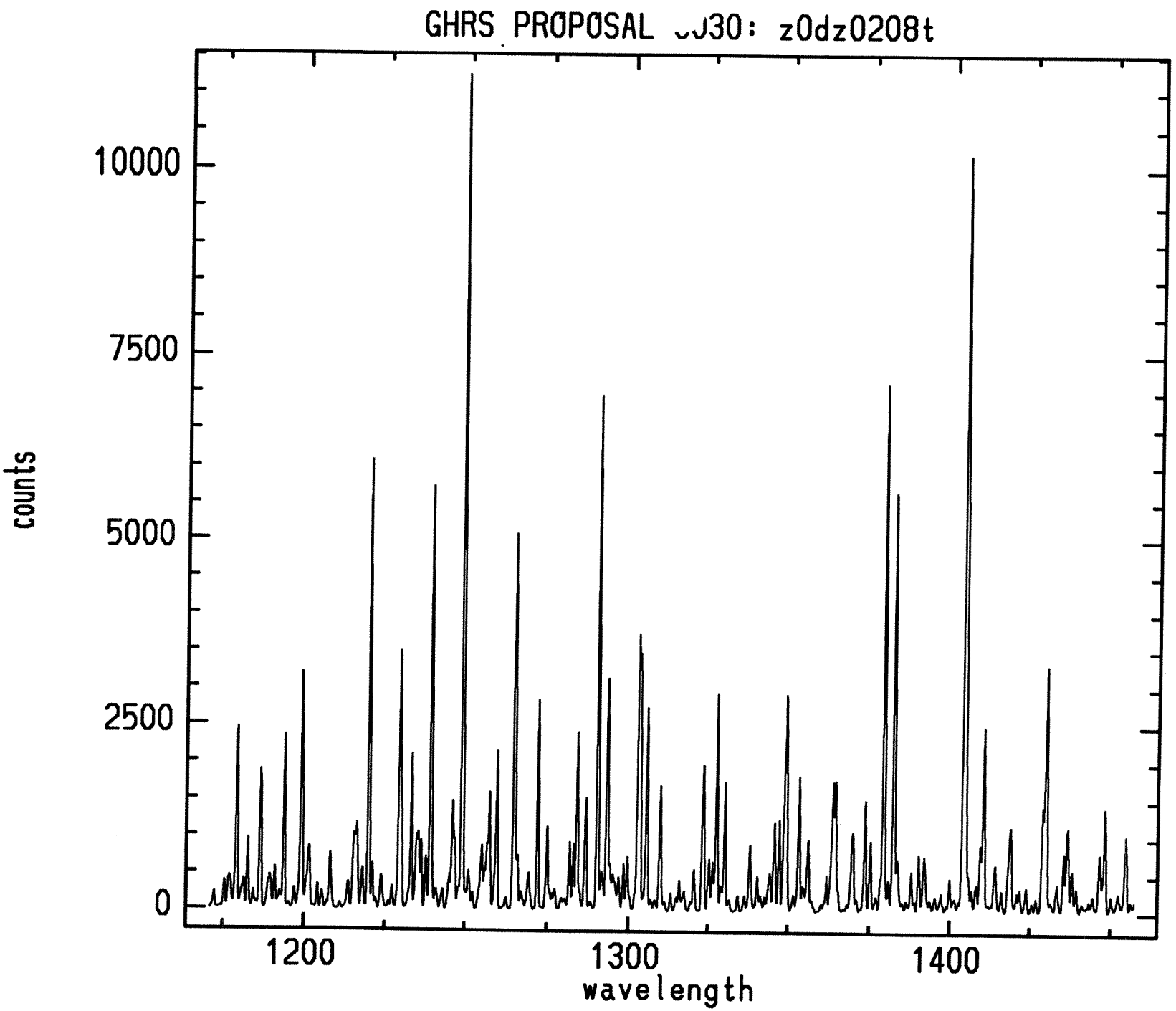


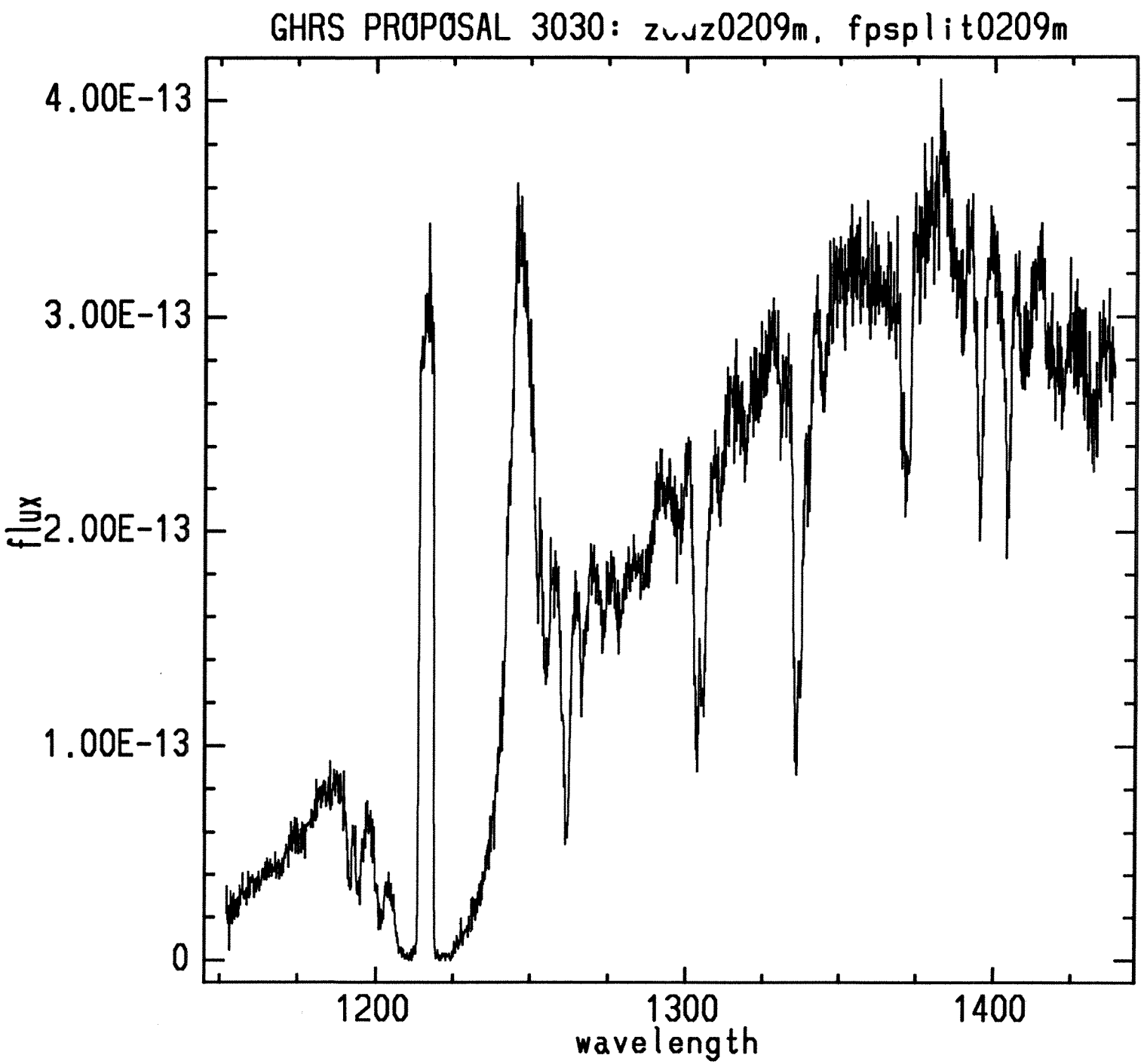
NOAO/IRAF [illegible] Fri Dec 7 16:47:16 1990


GHRS PROPOSAL 0023: z0dd510jt
600
400
200
0
counts
2330
2340
2350
2360
2370
wavelength



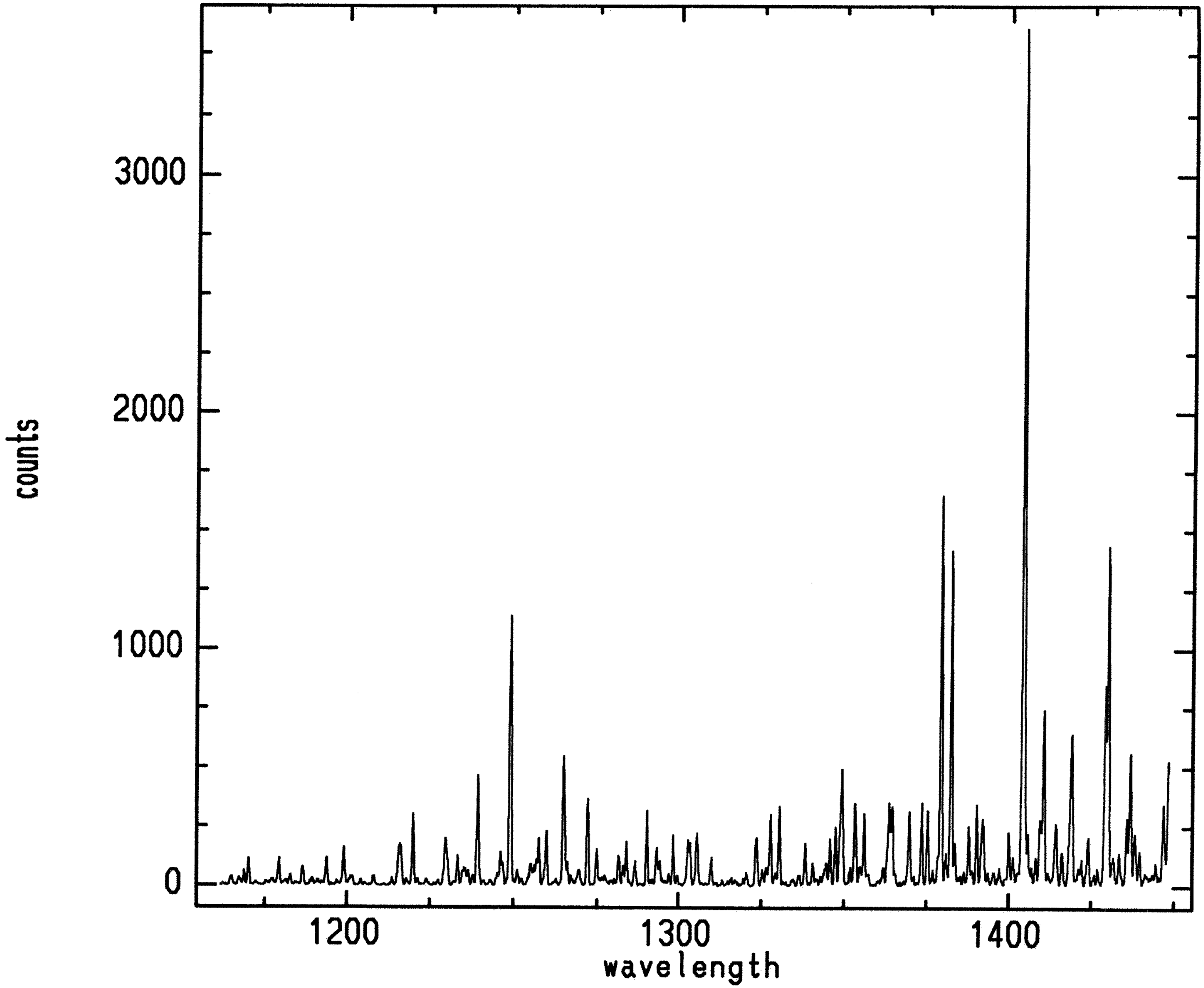
NOAO/IRAF ferna@saul.stsci.edu Fri Dec 7 16:49:50 1990


GHRS PROPOSAL 6030: z0dz0208t
10000
7500
5000
2500
0
counts
1200
1300
1400
wavelength

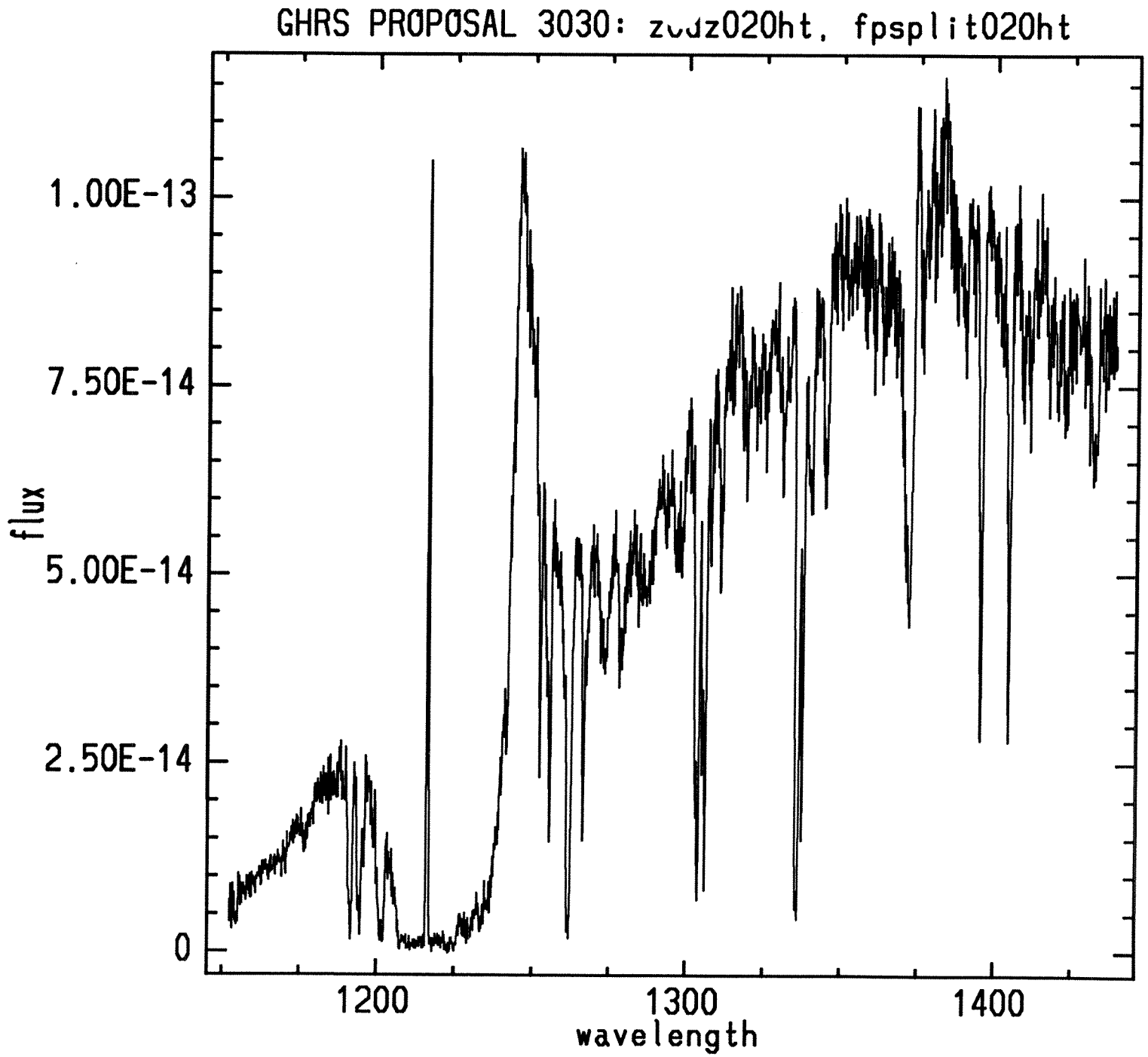


NOAO/IRAF lferrar@maxi.ucsi.edu Fri Dec 7 16:54:22 1990

GHRS PROPOSAL [illegible]J30: z0dz020gt



NOAO/IRAF Tue Jan 15 16:56:45 1991



NOAO/IRAF Herm@mmelastsci.edu Fri Dec 7 16:58:27 1990

TECHNICAL NOTES FOR READING THE GHRS DATA

Here are reported a few notes which are intended to facilitate the reading of the GHRS data contained in the enclosed tape. For further information, please refer to the GHRS handbook and to the ICD19 document.

FILE EXTENSIONS

Header files are designated as z*.*h (ASCII) and data files are designated by z*.*d (binary)

Input files

.shh & .shd

Standard Header Packet: contains telemetry values for HRS specific software monitors and the current value table which includes calibration critical engineering data.

.ulh & .uld

Unique Data Log: contains the observation control table for the current observation as well as some observation data produced by the flight software.

.d0h & .d0d

Science Data Files: HRS science data consists of single precision floating point values for the 500 science diodes.

.x0h & .x0d

Extracted Data Files: contain the single precision floating point values for the twelve special diodes.

.q0h & .q0d and .xqh & .xqd

Data Quality Files: contain flags or fill values for bad data.

Output files from calibration

.c0h & .c0d

Calibrated Wavelength Files: contain double precision floating point calibrated wavelengths for the

science diodes.

.c1h & .c1d

Calibrated Flux Files: contain double precision floating point calibrated fluxes for the science diodes.

.c2h & .c2d

Propagated Statistical Error Files: contain a measure of the statistical errors of the original data values.

.cqh & .cqd

Wavelength/Flux Data Quality Files: flag bad pixel values in the Calibrated Wavelength, Flux and propagated Statistical Errors files.

.c3h & .c3d

Calibrated Special Diodes: contain the calibrated values of the special diodes.

.c4h & .c4d

Special Diodes Data Quality Files: flag bad pixel values in the calibrated special Diodes Files.

A few files which are not produced by the standard onboard calibration techniques are included in the tape. These files are designated by:

AVER*.* : the calibration procedure applied by PODPS does not merge spectra resulting from repeated exposures. As a consequence, the calibrated output files *.c0h & *.c0d and *.c1h & *.c1d have a number of groups equal to the number of repeats plus one. These groups have been merged using standard IRAF tools. The resulting files are AVER*.c0h & c0d and AVER*.c1h & c1d for the Calibrated Wavelength and Flux Files, respectively.

FPSPLIT*.* : for each observation in which the FPSplit technique was applied, the calibrated output files *.c0h & *.c0d and *.c1h & *.c1d have four separate groups, each corresponding to

an integration at a different carrousel position. These four groups have been merged, using standard IRAF tools. The resulting files are FPSPLIT*.c0h & c0d and FPSPLIT*.c1h & c1d for the Calibrated Wavelength and Flux Files, respectively.

GRAN*.hh*: for each FPSplit observation, these files contain a solution for the photocathode granularity vector. This solution is provided when the FPSplit observations are combined.

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SAMPLE OF GHRS DATA

PROPOSAL 3021 (October 11, 1990)

Root Name	Target	Substep	FPSplit	Repeats	Aperture	Detector	Grating	Sp. Order
z0de0106t	ξ Per	1/2	yes	0	LSA	1	Ech A	43
z0de010jt	ξ Per	1/2	yes	0	SSA	1	Ech A	43

PROPOSAL 3023 (November 27, 1990)

Root Name	Target	Substep	FPSplit	Repeats	Aperture	Detector	Grating	Sp. Order
z0dz0209m	M42	1/4	yes	0	LSA	1	G140L	1
z0dz0208t	Int.Cal.Lamp	1/4	no	0	SC2	1	G140L	1
z0dz020gt	Int.Cal.Lamp	1/4	no	0	SC1	1	G140L	1
z0dz020ht	M42	1/4	yes	0	SSA	1	G140L	1

PROPOSAL 3030 (November 24, 1990)

Root Name	Target	Substep	FPSplit	Repeats	Aperture	Detector	Grating	Sp. Order
z0dd5106m	α Tau	1/4	no	2	LSA	2	Ech B	24
z0dd5108m	α Tau	1/4	no	0	LSA	2	G270M	1
z0dd510dm	Int.Cal.Lamp	1/4	no	0	SC1	2	Ech B	24
z0dd510fm	α Tau	1/4	no	0	SSA	2	Ech B	24
z0dd510jt	Int.Cal.Lamp	1/4	no	0	SC1	2	G270M	1
z0dd510kt	α Tau	1/4	no	3	SSA	2	G270M	1

```
$NOP
$NOP ****************** ROB-B ********************
$EXE TPLIST BS

INPUT PARAMETERS ARE:  AS SR=1=1 1 1

 TAPE NO.   1              FILE NO.   1
 RECORD   1                LENGTH   288
SIMPLE  =                          T /  FITS STANDARD                                    BITPIX  =
      32 /  FITS BITS/PIXEL                                       NAXIS    =                     1 /  NUMB
ER OF AXES                               NAXIS1   =                  2000 /
                   BLOCKED =                        T /  Tape may be blocked
   EXTEND  =                    T /  There maybe standard extensions                     BSCALE   =    2.9
2272099916452E-9 /  REAL = TAPE*BSCALE + BZERO                    BZERO    =    2.3271363525391E3 /
                                          CPSIZE   =                1216 /  PSIZE of original i
mage                    ORIGIN   = 'STScI-STSDAS'          /
      FITSDATE= '16/01/91'             / Date FITS file was created                      IRAFNAME= '
averdd5106m_cvt.c0h' / NAME OF IRAF IMAGE FILE                    IRAF-MAX=            2.333413E3
 /  DATA MAX                                    IRAF-MIN=            2.320860E3 /  DATA MIN
                          IRAF-B/P=                       32 /  DATA BITS/PIXEL
          IRAFTYPE= 'FLOATING'             /                                              SDASMGN
U=                    1 /  Number of groups in original image          CRVAL1   =     149777350.02
1485                                              CRVAL2   =                -1.
                             CRVAL3   =                 -1.
            CRPIX1   =                     1.                                                 CD1
_1   =                  1.                                               DATAMIN  =              2.
320860E3 /  DATA MAX                                     DATAMAX  =           2.333413E3 /  DATA MA
X                            FILLCNT  =                        0
                ERRCNT   =                     0
 PKTTIME  = '27-NOV-1990 15:54:07.32 '                                              CTYPE1   = 'CHANNEL
 '                                                      CTYPE2   = 'RA---TAN'
                                 CTYPE3   = 'DEC--TAN'
                     OBSRPT   =                     2
   OBSINT   =                     1                                                    YDEF     =
        1642                                                  XDEF     =                    2048
                                   SAMPLE   =               28.9361
                      DELTAS   =              0.2507202

***** JOB DONE.
$EXE TPLIST BS

INPUT PARAMETERS ARE:  AS SR=1=1 1 1 26

 TAPE NO.   1              FILE NO.   26
 RECORD   1                LENGTH   2880
SIMPLE  =                          T /  FITS STANDARD                                    BITPIX  =
       8 /  Character information                                 NAXIS    =                     0 /  No i
mage data array present                 EXTEND   =                    T /  There maybe standard ex
tensions                DATE     = '16/01/91'            / Date tape was written
   IRAFNAME= 'null_image '          / ZERO LENGTH DUMMY IMAGE                          END
```

90-037B-07A&7B

HS Hubble Space Telescope

90-037B-07A ASVI-00023

90-037B-08A

Early Release with PC/WF Observations

Early Release FOC Observations

This dataset catalog consists of one 9-track, 6250 BPI, binary tape.

The D and C number are as follows:

D#	C#	FILES	
D-82333	C-27880	1-18	Early Rel. WF/PC OBS.
		19-38'	Early Rel. FOC OBS.

letter p.1

SPACE TELESCOPE SCIENCE INSTITUTE

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(301) 338-4700
Telex 6849101

Chris Blades: Telescope & Instruments Branch Chief

301 338 4805
Fax: 301 338 4767
Span: Blades::Scivax
Bitnet: Blades@stsci.bitnet

21 September 1990

Dear Colleague,

Please find enclosed a magnetic tape containing some of the first results obtained with the Hubble Space Telescope cameras. These data were obtained by the Investigation Definition Teams during August 1990 as part of the Science Assessment and Early Release observations. Further details of these programs can be found in the August issue of the STScI Newsletter. We are releasing these data now to facilitate your own reassessment of your HST observing program. Accordingly, this data tape is being distributed to all general observers and guaranteed time observers who have HST time in forthcoming observing cycles. You should not distribute these data outside your own team without first checking with the Principal Investigators who are Jim Westphal (WF/PC) and Duccio Macchetto (FOC).

A second data tape containing spectrograph observations will be compiled and distributed once these data are in hand (probably by early November). We are also compiling a collection of OTA point spread function images for our own analysis of the spherical aberration and plan to have these data generally available in the months ahead.

You should bear in mind when inspecting these images that they are early data, and not all the software bugs have been fixed nor all the calibration wrinkles ironed out. In particular, many of the files used to calibrate the data are derived from ground observations which are now inappropriate. In other words: treat the data with care.

Scientific investigations utilizing these data are already underway by the Investigation Definition Teams. The IDTs are going to submit the scientific results for rapid publication. Specific contacts for these data are given on the next page. Please talk with the PIs or the contact scientists if you have questions about the data.

Target	Team	IDT Lead	STScI contact
NGC1850	WF/PC	Baum	Gilliland (x4454)
NGC925	WF/PC	Light	Griffiths (x4824)
NGC188	WF/PC	Westphal	Mackenty (x4559)
NGC7457	WF/PC	Lauer	Oergerle (x4744)
M15	WF/PC	Faber	Gilliland (x4454)
Saturn	WF/PC	Westphal	Weaver (x4765)
R Aquarii	FOC	Paresce (x4823)	Nota (x4520)
R136A	FOC	Weigelt (x5004)	Greenfield (x4783)
SN1987A	FOC	Jakobsen (x5004)	Panagia (x4916), Kirshner (CfA)

Note: The WF/PC IDT are located at Bowie State College and can be contacted by telephone (301 464 9624) and Fax (301 805 9205). The FOC IDT are at STScI. Two observations of SN1987A were taken. The one included on this tape is from a GO program with Bob Kirshner (CfA, Harvard) as PI.

There are 18 WF/PC files on the tape in the following order.

Target	Filename	Cam	Filter	Exp Time	Comments
NGC1850	w0bs0102t	WF	F555W	1100s	LMC Cluster
NGC925	w0bu0101t	WF	F555W	950s	Spiral Arm
NGC925	w0bu0102t	WF	F555W	950s	CR SPLIT
NGC188	w0bv0102t	WF	F555W	12s	PSF obs
NGC7457	w0bw0103t	PC	F555W	400s	S0 Galaxy
M15	w0cg0108t	PC	F336W	100s	poor tracking
Saturn	w0ck0101t	WF	F439W	0.4s	coarse track
Flat Field #1	a3u15306w	WF	F336W	...	for F336W
Flat Field #2	f439w	WF	F439W	...	for F439W
Flat Field #3	f555wa	WF	F555W	...	for F555W
Flat Field #4	f547m	WF	F547M	...	for F547M

The 20 FOC files conclude the data set.

Target	Filename	Cam	Filter	Exp Time	Comments
R Aquarii	x0c90101t	f/96	F501N	597s	Stellar jet
SN1987A	x0c80106t	f/96	F501N	822s	LMC supernova
PSF #1	x0cj010bt	f/96	F501N	721s	for above images
R136A	x0bq0102t	f/96	F346M/F8ND	259s	LMC cluster
PSF #2	x0cj010ct	f/96	F346M/F4ND	723s	for above image

Both uncalibrated and calibrated images are provided on the tape. The .d0h is the uncalibrated image and the .c0h and .c1h (for FOC only) are the images after routine calibration. Also included are the standard headers (.shh) for FOC. The calibration processes are described in the STSDAS Calibration Guide (16 April 1990). For WF/PC calibrated data the bias, preflash, and dark reference files were obtained from laboratory testing of WF/PC prior to flight. The A to D correction was obtained from on-orbit data. The WF F555W and F439W flat fields were obtained from the average of observations of the sunlit earth. The NGC7457 observation was calibrated using an F547M flat field made on-orbit. The M15 observation was calibrated using laboratory flat field data. The flat fields are included on the tape. Users are cautioned that some of the keywords in the image headers are currently reported incorrectly. For FOC calibrated data the flat field and geometric reference files were obtained from laboratory measurements; these are in the process of being improved. For FOC we have included PSF examples. These exposures are not particularly long but do give a general impression of the FOC PSF at those two wavelengths.

In all cases the reference files used for calibration purposes are provisional and liable to be significantly improved in the near future. (A major purpose of the Science Verification program starting soon is to derive good on-orbit reference data for calibration.)

A listing of the tape is enclosed with this letter.

The data tape is in FITS format, 6250bpi, with a blocking factor of 10. Difficulties in reading the tape should be directed to the STScI STSDAS group (Bob Hanisch x4910).

Yours Sincerely

Chris Blades

Chris Blades (Telescope & Instruments Branch Chief)

Duccio Macchetto (Science Programs Division Head)

log-1

LISTING OF TAPE LOG

WF/PC IMAGES

FILE#	IRAFNAME	Dimensions				BP	DATE	OBJECT
1	w0bs0102t_cvt.d0h	800	800	4		16	17/08/90	NGC 1850 (unprocessed)
	w0bs0102t_cvt.d0h.tab	584	4		Nc=	37		
2	w0bs0102t_cvt.c0h	800	800	4		16	17/08/90	NGC 1850 (processed)
	w0bs0102t_cvt.c0h.tab	584	4		Nc=	37		
3	w0bu0101t_cvt.d0h	800	800	4		16	16/08/90	NGC 925 (unprocessed)
	w0bu0101t_cvt.d0h.tab	584	4		Nc=	37		
4	w0bu0101t_cvt.c0h	800	800	4		16	16/08/90	NGC 925 (processed)
	w0bu0101t_cvt.c0h.tab	584	4		Nc=	37		
5	w0bu0102t_cvt.d0h	800	800	4		16	17/08/90	NGC 925 (unprocessed)
	w0bu0102t_cvt.d0h.tab	584	4		Nc=	37		
6	w0bu0102t_cvt.c0h	800	800	4		16	17/08/90	NGC 925 (processed)
	w0bu0102t_cvt.c0h.tab	584	4		Nc=	37		
7	w0bv0102t_cvt.d0h	800	800	4		16	16/08/90	NGC 188 (unprocessed)
	w0bv0102t_cvt.d0h.tab	584	4		Nc=	37		
8	w0bv0102t_cvt.c0h	800	800	4		16	16/08/90	NGC 188 (processed)
	w0bv0102t_cvt.c0h.tab	584	4		Nc=	37		
9	w0bw0103t_cvt.d0h	800	800	4		16	17/08/90	NGC 7457 (unprocessed)
	w0bw0103t_cvt.d0h.tab	584	4		Nc=	37		
10	w0bw0103t_cvt.c0h	800	800	4		16	17/08/90	NGC 7457 (processed)
	w0bw0103t_cvt.c0h.tab	584	4		Nc=	37		
11	w0cg0108t_cvt.d0h	800	800	4		16	26/08/90	M15 (unprocessed)
	w0cg0108t_cvt.d0h.tab	584	4		Nc=	37		
12	w0cg0108t_cvt.c0h	800	800	4		16	26/08/90	M15 (processed)
	w0cg0108t_cvt.c0h.tab	584	4		Nc=	37		
13	w0ck0101t_cvt.d0h	800	800	4		16	26/08/90	Saturn (unprocessed)
	w0ck0101t_cvt.d0h.tab	584	4		Nc=	37		
14	w0ck0101t_cvt.c0h	800	800	4		16	26/08/90	Saturn (processed)
	w0ck0101t_cvt.c0h.tab	584	4		Nc=	37		
15	a3u15306w_cvt.r6h	800	800	4		16	11/11/89	Flat (F336W)
	a3u15306w_cvt.r6h.tab	579	4		Nc=	37		
16	f439w_cvt.r6h	800	800	4		16	02/08/90	Flat (F439W)
	f439w_cvt.r6h.tab	584	4		Nc=	37		
17	f555wa_cvt.r6h	800	800	4		16	01/08/90	Flat (F555W)
	f555wa_cvt.r6h.tab	584	4		Nc=	37		
18	f547m_cvt.r6h	800	800	4		16	24/07/90	Flat (F547M)
	f547m_cvt.r6h.tab	584	4		Nc=	37		

LISTING OF TAPE LOG (CONTINUED)

FOC IMAGES

19	x0c90101t_cvt.c0h	1024	1024		16	23/08/90	RAqr (processed)
	x0c90101t_cvt.c0h.tab	335	1	Nc=	20		
20	x0c90101t_cvt.c1h	1024	1024		16	23/08/90	RAqr (processed)
	x0c90101t_cvt.c1h.tab	335	1	Nc=	20		
21	x0c90101t_cvt.d0h	512	1024		16	23/08/90	RAqr (unprocessed)
	x0c90101t_cvt.d0h.tab	335	1	Nc=	20		
22	x0c90101t_cvt.shh	965			16	23/08/90	RAqr (standard header)
	x0c90101t_cvt.shh.tab	49	1	Nc=	3		
23	x0c80106t_cvt.c0h	512	512		16	24/08/90	SN1987A (processed)
	x0c80106t_cvt.c0h.tab	335	1	Nc=	20		
24	x0c80106t_cvt.c1h	512	512		16	24/08/90	SN1987A (processed)
	x0c80106t_cvt.c1h.tab	335	1	Nc=	20		
25	x0c80106t_cvt.d0h	512	512		16	24/08/90	SN1987A (unprocessed)
	x0c80106t_cvt.d0h.tab	335	1	Nc=	20		
26	x0c80106t_cvt.shh	965			16	24/08/90	SN1987A (stand. head.)
	x0c80106t_cvt.shh.tab	49	1	Nc=	3		
27	x0cj010bt_cvt.c0h	512	512		16	28/08/90	FOC PSF (F501N)
	x0cj010bt_cvt.c0h.tab	335	1	Nc=	20		
28	x0cj010bt_cvt.c1h	512	512		16	28/08/90	FOC PSF (F501N)
	x0cj010bt_cvt.c1h.tab	335	1	Nc=	20		
29	x0cj010bt_cvt.d0h	512	512		16	28/08/90	FOC PSF (F501N)
	x0cj010bt_cvt.d0h.tab	335	1	Nc=	20		
30	x0cj010bt_cvt.shh	965			16	28/08/90	FOC PSF (F501N)
	x0cj010bt_cvt.shh.tab	49	1	Nc=	3		
31	x0bq0102t_cvt.c0h	512	512		16	23/08/90	R136 (processed)
	x0bq0102t_cvt.c0h.tab	335	1	Nc=	20		
32	x0bq0102t_cvt.c1h	512	512		16	23/08/90	R136 (processed)
	x0bq0102t_cvt.c1h.tab	335	1	Nc=	20		
33	x0bq0102t_cvt.d0h	512	512		16	23/08/90	R136 (unprocessed)
	x0bq0102t_cvt.d0h.tab	335	1	Nc=	20		
34	x0bq0102t_cvt.shh	965			16	23/08/90	R136 (standard header)
	x0bq0102t_cvt.shh.tab	49	1	Nc=	3		
35	x0cj010ct_cvt.c0h	512	512		16	28/08/90	FOC PSF (F346M)
	x0cj010ct_cvt.c0h.tab	335	1	Nc=	20		
36	x0cj010ct_cvt.c1h	512	512		16	28/08/90	FOC PSF (F346M)
	x0cj010ct_cvt.c1h.tab	335	1	Nc=	20		

37	x0cj010ct_cvt.d0h	512	512		16	28/08/90	FOC PSF (F346M)	
	x0cj010ct_cvt.d0h.tab	335	1	Nc=	20			
38	x0cj010ct_cvt.shh	965			16	28/08/90	FOC PSF (F346M)	
	x0cj010ct_cvt.shh.tab	49	1	Nc=	3			

```
TAPE NO.  1              FILE NO.  1
 RECORD   1              LENGTH   2880
SIMPLE  =                    T / FITS STANDARD                  BITPIX  =
          16 / FITS BITS/PIXEL                 NAXIS   =                    3 / NUMB
ER OF AXES                   NAXIS1  =                  800 /
                NAXIS2  =                  800 /
    NAXIS3  =                    4 /                            BLOCKED =
                   T / Tape may be blocked          EXTEND  =                    T /
There maybe standard extensions          BSCALE  =          1.0E0 / REAL = TAPE*BSCALE
+ BZERO                  BZERO   =          0.0E0 /
      OPSIZE  =               1836 / PSIZE of original image                ORIGIN  = '
STScI-STSDAS'       /
 / Date FITS file was created                IRAFNAME= 'w0bs0102t_cvt.d0h'  / NAME OF IRAF IMA
GE FILE                  IRAF-MAX=       4.095000E3 / DATA MAX
          IRAF-MIN=       3.250000E2 / DATA MIN                              IRAF-B/
P=                   16 / DATA BITS/PIXEL                IRAFTYPE= 'SHORT   '
      /                                  SDASMGNL=                    4 / Number of g
roups ir original image          CRVAL1  =    77.1871673559389
               CRVAL2  =   -68.7667565044661                                CRV
AL3  =     78816876.181079                                  CRPIX1  =
    869.                                 CRPIX2  =                  870.
                         CD1_1   =       2.529755E-5
               CD1_2   =      -1.141240E-5
 CD2_1   =      1.141240E-5                                        CD2_2   =
 2.529755E-5                              DATAMIN =       3.250000E2 / DAT
A MAX                         DATAMAX =       4.095000E3 / DATA MAX
                MIR_REVR=                    1
     ORIENTAT=         -24.2814                                  FILLCNT =
                                         ERRCNT  =                    0
                      FPKTTIME= '16-AUG-1990 23:38:58.05 '
                    LPKTTIME= '16-AUG-1990 23:39:12.42 '
        CTYPE1  = 'RA---TAN'                                      CTYPE2  =
'DEC--TAN'                                CTYPE3  = 'TIME    '
                              DETECTOR=                    1
                    DEZERO  =                    0.
          GOODMIN =                    0.                                GOODMA
X =                  0.                              DATAMEAN=
     .                              GPIXELS =                    0
                         SCFTERRS=                    0
               CALIBDEF=                                                  ST
ATICD =                                              ATICDSAT =
                                   DATALOST=                    0
                         BADPIXEL=                    0
               PHOTMODE= '                    '
  PHOTFLAM=                    .                              PHOTZPT =
                    .                                PHOTPLAM=          0.
                              PHOTBW  =                    0.

                         / GROUP PARAMETERS: OSS                          /

 GROUP PARAMETERS: POCPS
```

```
cond filter number (0-48)                PFILTER1=                    23 / Preflash filter 1 num
ber (0-48)                               PFILTER2=                    16 / Preflash filter 2 number (0-48)

                / EXPOSURE TIME AND RELATED INFORMATION
/ Exposure time (seconds)                WEXPODUR=       0.1100000E-09 / Desired duration
of exposure (seconds)        NSBCLOSE=                    6 / Number of B shutter closes
          PREFTIME=       0.3000000E+02 / Preflash time (seconds)                DARKTIME
=       0.2321000E+04 / Dark time (seconds)                PURGTIME=       0.1728000E
+06 / Time since last SuperPurge (seconds)        NSHUTCYC=                    3 / Number of shu
tter cycles                      WEXPOTIM=       0.2300400E-08 / Time of major frame pulse preced
ing exposure stSCPATIME= '                    ' / First shutter open time  (yyocdhhmmss)        PSTR
TIME= '1990.228:23:38:37 ' / Predicted observation start time  (yycdddhhmmss)PSTPTIME= '1990.228:23:
59:37 ' / Predicted observation stop  time  (yydddhhmmss)

                                                / TARGET INFORMATION
                TRGTNAME= '3C 48_1           ' / target name
RTASNTRG=    0.77186737E+02 / right ascension of target                DECLNTRG= -0.687617
03491 E+02 / declination of target                EPOCHTRG=       0.2000000E+04 / epoch
 of coordinate system

                                / INSTRUMENT STATUS USED IN DATA PROCESSING
    TECTEMP =      -0.1000000E+01 / TEC temperature (Celcius)                WBA3PCTM=
   0.1131837E+02 / Bay 3 temperature (Celcius)                KSPOTS  = 'OFF               ' / S
tatus of Kelsall spot lamps: ON, OFF        SHUTTER = '                  ' / Shutter in place cur
ing preflash: A, B, UNKNOWNFGSLOCK = '                ' / FGS Lock Status: FINE, COARSE, LOST, NO

                / IMAGE TYPE CHARACTERISTICS                IMAGETYP= 'SCIENCE         '
 / image type: SCIENCE/BIAS/DARK/PREF/FLAT/SPECIALCDBSFILE= 'NO                ' / CDBS file:  GENE
RIC/BIAS/DARK/PREF/FLAT/MASK/AT

                                / RSDP CONTROL KEYWORDS                MASKCOR
R= 'YES               ' / Do mask correction: YES, NO, DONE          ATODCORR= 'YES
    ' / Do A-to-D correction: YES, NO, DONE          BLEVCORR= 'YES               ' / Do bias leve
l correction: YES, NO, DONE       BIASCORR= 'YES               ' / Do bias correction: YES, NO, DO
NE              PREFCORR= 'YES               ' / Do preflash correction: YES, NO, DONE          PUR
GCORR= 'NO                ' / Do purge correction: YES, NO, DONE          DARKCORR= 'YES
       ' / Do dark correction: YES, NO, DONE            FLATCORR= 'YES               ' / Do flat
field correction: YES, NO, DONE       DOSATMAP= 'YES               ' / Output Saturated Pixel Map:
 YES, NO, DONE      DOHISTOS= 'YES               ' / Make histograms: YES, NO, DONE
 OUTDTYPE= 'REAL              ' / Output image datatype: REAL, LONG, SHORT

                                                                / CALI
BRATION REFERENCE FILES                MASKFILE= 'wref$a451212ow.r0h' / name of the input DQF o
f known bad pixels      ATODFILE= 'wref$a2dwf.r1h'      / name of the A-to-D conversion file
     BLEVFILE= 'wcal$w0bs0102t.x0h' / Engineering file with extended register data   BLEVDFIL= 'wca
l$w bs0102t.q1h' / Engineering file DQF                BIASFILE= 'wref$a421549nw.r2h' /
name of the bias frame reference file        BIASDFIL= 'wref$a421549nw.b2h' / name of the bias fr
ame reference DQF          PREFFILE= 'wref$prefwfa.r3h'    / name of the preflash reference file
       PREFDFIL= 'wref$a42155'qw.b3h' / name of the preflash reference DQF          PURGFILE=
'wref$9ck1027hw.r4h' / name of the purge reference file          PURGDFIL= 'wref$9ck1027hw.b4h
' / name of the purge reference DQF          DARKFILE= 'wref$darkwf.r5h'     / name of the dar
k reference file          DARKDFIL= 'wref$a421550bw.b5h' / name of the dark reference DQF
          FLATFILE= 'wref$a3u1531lw.r6h' / name of the flat field reference file          FLATDF
IL= 'wref$a3u15317w.b6h' / name of the flat field reference DQF
```

SURFLATD= 0.000000E+00 / surface feature latitude SURFLONG=
0.000000E+00 / surface feature longitude SURFALTD= 0.0000000E+
00 / surface feature altitude

/ PODPS FILL VALUES

PODPSFF = 0 / 0=(no podps fill), 1=(podps fill present) STDCF
F = 1 / 0=(no st dcf fill), 1=(st dcf fill present) STDCFFP = '0000
' / st dcf fill pattern (hex) RSDPFILL= -100 / bad data f
ill value for calibrated images

/ MISC KEYWORDS D

ATE = '17/08/90 ' / date file written (dd/mm/yy) PLOTID = '
' / plot title

/ DMF EXPOSURE DATA

PROPOSID= '3 8 ' / PEP proposal identifier

PEP_EXPO= '17.0001002 ' / PEP exposure identifier including sequence TARGNAM1= 'NGC18
5 ' / proposer's target name (first 18 char) TARGNAMC= ' ' / ta
rget name continuation (last 12 char) PLAN_EXP= 0.2200000000000E+04 / proposed time per exp
osure PLAN_SN = 0.1000000000000E+00 / proposed signal-to-noise ratio

PRIORITY= 1 / proposer's priority for exposure RA =
0.7718674E+ 2 / right ascension of the target (degrees) DEC = -0.6876170E+02
/ declination of the target (degrees) EXPOSURE= 0.2201000E+04 / exposure duration
(seconds)--calculated EXPSTRT = 0.2300400E-08 / exposure start time (seconds)

EXPEND = 0.3193600E-08 / exposure end time (seconds) SUNANGLE
= 0.9533397E+ 2 / angle between sun and V1 axis (degrees) MOONANGL= 0.9587580E
+02 / angle between moon and V1 axis (degrees) CTYPE3 = 'GROUP_NUMBER' / Extra dimensi
on axis name CD3_3 = 1 /

CD3_1 = 0 / CD1_
3 = 0 / CD2_3 =
0 / CD3_2 = 0 /

END

q u q t q s g

t u t s t t s q q q s q u t t u u u u s u o q q t w t s q y u s q s q s s u s u u u t t q t w u q q
y s { q t q u w } w u s s t u u s t u u s { u q t u w t o q y

q u w { u u s ‖ t w w { x u y

u u y s u y u u u s q u p w t w t u u x u u u u t y q c s q t u u u p s u u u u t q q w y y u s u
t u q { w m u q t u t u w p u y u } w u u w q u u q s u w s u t u u t t w y s u q p t | x t x w s s