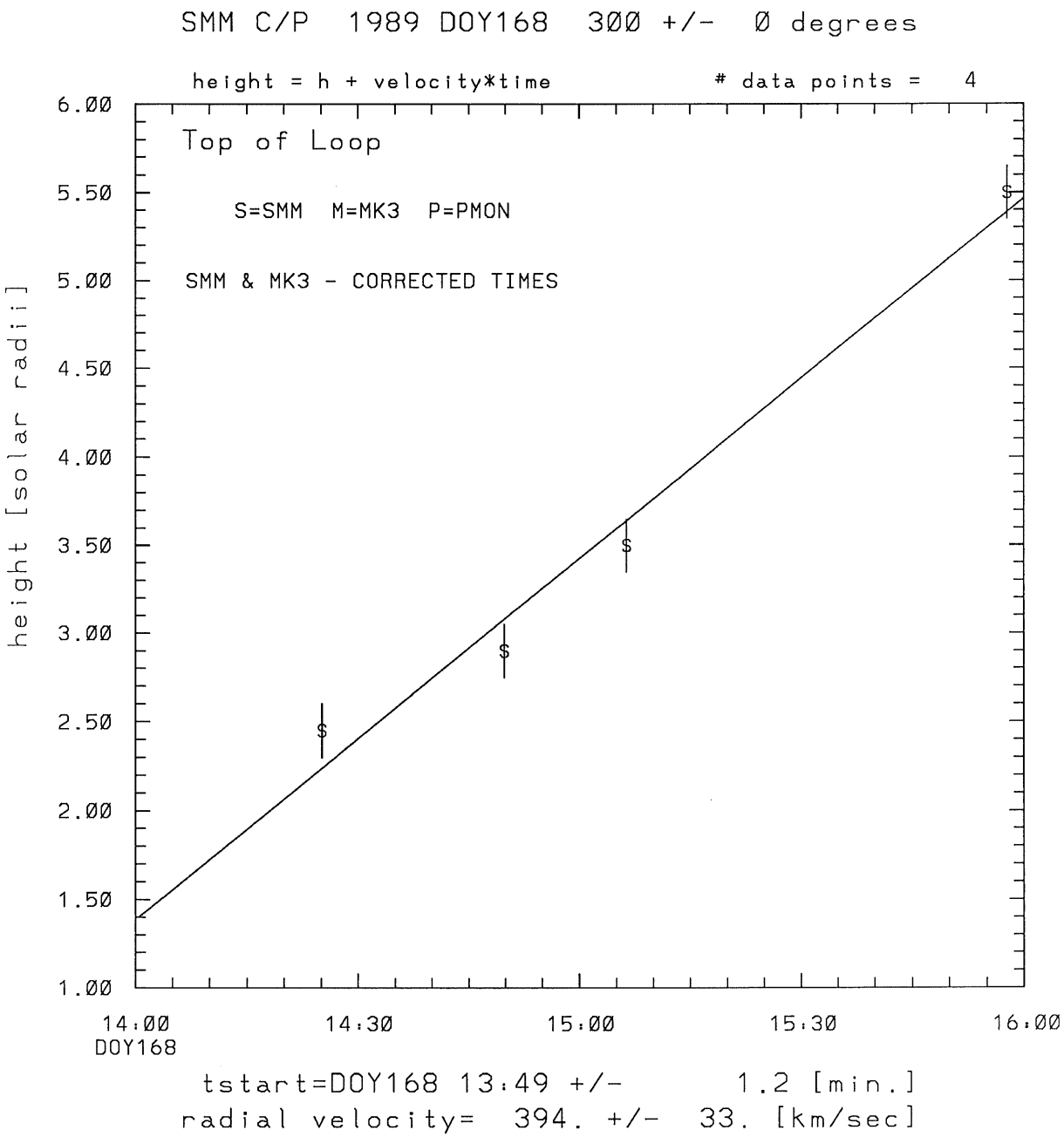
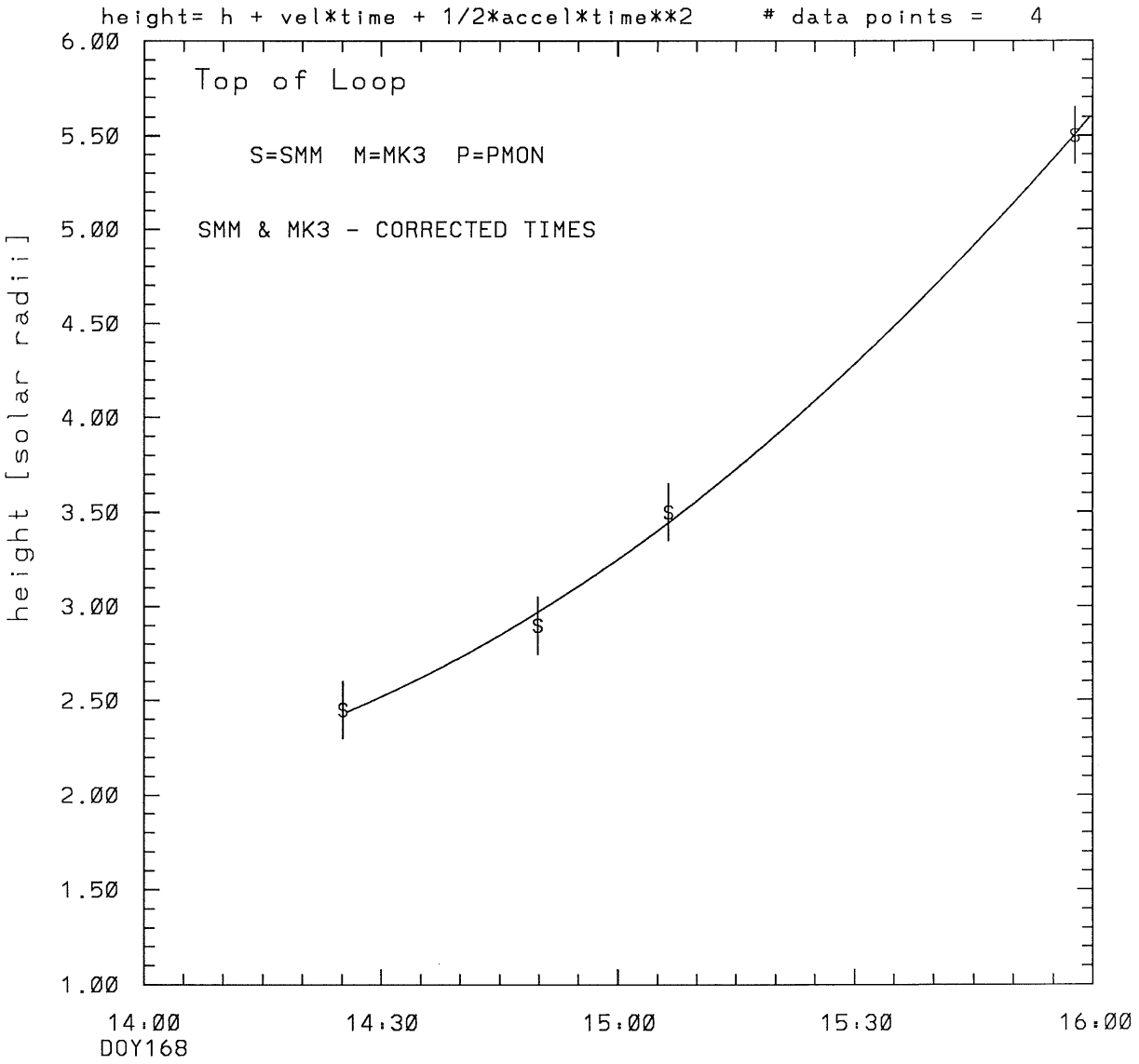

SMM C/P 1989 DOY168 300 +/- 0 degrees
height = h + velocity*time
# data points = 4
Top of Loop
S=SMM M=MK3 P=PMON
SMM & MK3 - CORRECTED TIMES
height [solar radii]
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
14:00
DOY168
14:30
15:00
15:30
16:00
tstart=DOY168 13:49 +/- 1.2 [min.]
radial velocity= 394. +/- 33. [km/sec]

SMM C/P 1989 DOY168 300 +/- 0 degrees

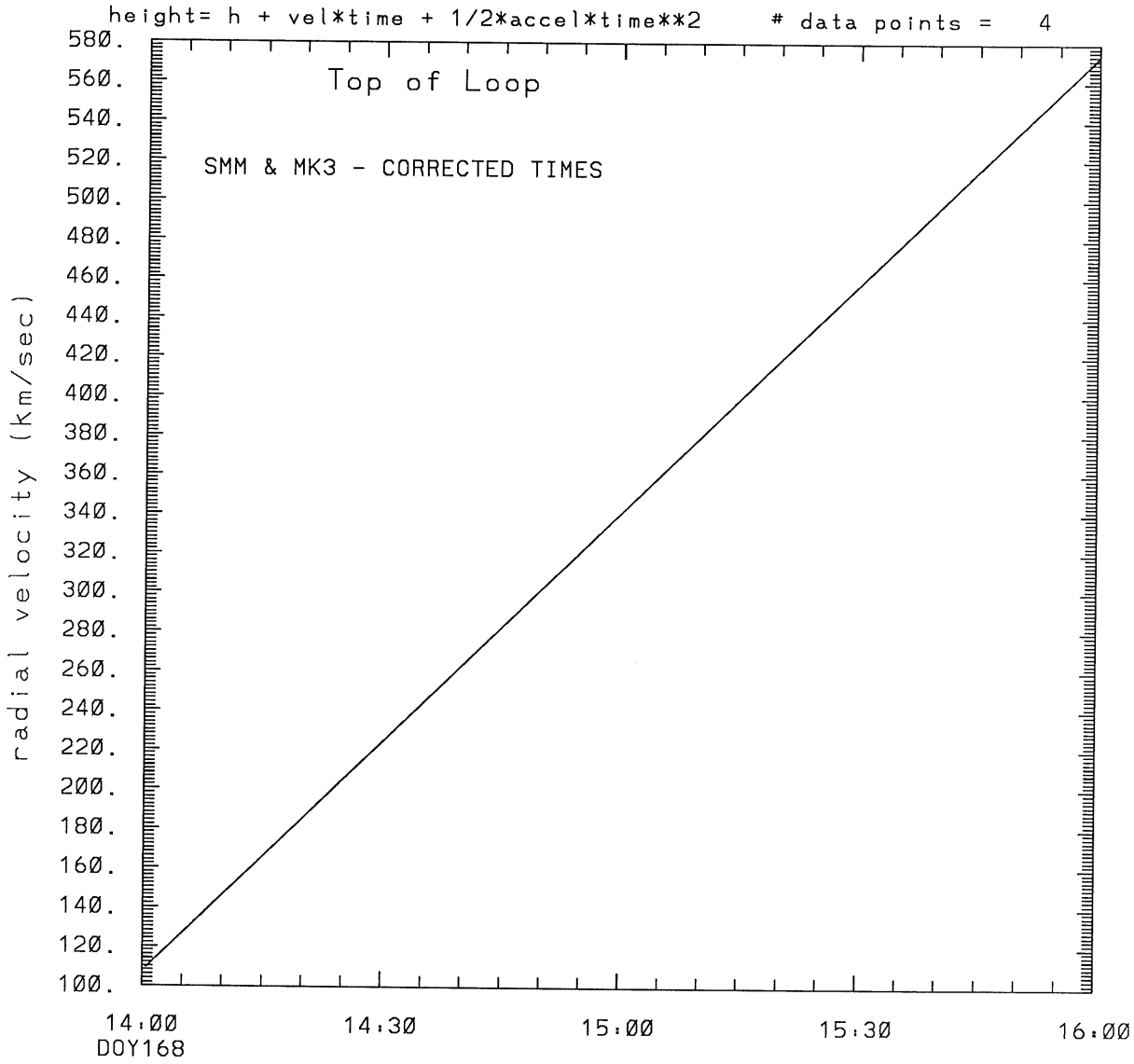


tstart=DOY168 13:33 from derivative=0

Event begins at 1.96 Solar Radii

radial acceleration= 0.0648 +/- 0.0132 [km/sec**2]

SMM C/P 1989 DOY168 300 +/- 0 degrees



tstart=DOY168 13:33 from derivative=0

Event begins at 1.96 Solar Radii

radial acceleration=0.648E-01 km/sec**2

****
This is a 1 order run
****

****
INPUT:
****

year doy	time	radii	error in radius	angle	error in angle	datatype
1989 168	14:25: 8	2.45	+/- 0.15	300.0	+/- 0.5	SMM
1989 168	14:49:53	2.90	+/- 0.15	300.0	+/- 0.5	SMM
1989 168	15: 6:24	3.50	+/- 0.15	300.0	+/- 1.0	SMM
1989 168	15:57:46	5.50	+/- 0.15	300.0	+/- 1.0	SMM

****
Structure being measured:
Top of Loop
****

****
OUTPUT:
****

START TIME:

Event began at t = 0 + -0.113E+02 +/- 0.120E+01 [minutes]
In more convenient units:
Event began at DOY 168 13:49 +/- 0.120E+01 [minutes]

Origin defined at DOY168 14: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 394. +/- 33. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.138E+01 +/- 0.206E+00 [solar radii]
c(2) = 0.340E-01 +/- 0.282E-02 [radii/min]
c(2) = 0.394E+03 +/- 0.327E+02 [km/sec]
c(3) = 0.000E+00 +/- 0.000E+00 [radii/min**2]
c(3) = 0.000E+00 +/- 0.000E+00 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

error in c(1)= 0.25246E+00 [radii] see Bevington pg. 114
error in c(2)= 0.34518E-02 [radii/min] see Bevington pg. 114

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.0000E+00 +/- 0.0000E+00[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 300. +/- 0. [degrees]
a(2) = 0.000E+00 +/- 0.000E+00 [degrees/min]
a(2) = 0.000E+00 +/- 0.000E+00 [rad/sec]
a(3) = 0.000E+00 +/- 0.000E+00 [degrees/min**2]
a(3) = 0.000E+00 +/- 0.000E+00 [rad/sec**2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:
The TANGENTIAL velocity at 14:25 = 0. km/sec
The TOTAL velocity at 14:25 = 394. km/sec

The TANGENTIAL velocity at 14:49 = 0. km/sec
The TOTAL velocity at 14:49 = 394. km/sec

The TANGENTIAL velocity at 15: 6 = 0. km/sec
The TOTAL velocity at 15: 6 = 394. km/sec

The TANGENTIAL velocity at 15:57 = 0. km/sec
The TOTAL velocity at 15:57 = 394. km/sec

****
The following info is for estimating goodness of the fit
****

Fit is ok [ier=1]

Standard Deviation in the height = 1.35
Standard Deviation in start time measurement = 0.339E+02
Error in time = 0.97419E+01 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.366E-01
Reduced Chi Squared = 0.110E+00
Chi Squared = 0.220E+00
The probability for exceeding chi square = 0.964E+00

The correlation coefficient = 0.990E+00
The probability that no LINEAR correlation exists between the variables = 0.1015E-01
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

****
This is a 2 order run
****

****
INPUT:
****

year	doy	time	radii	error in radius	angle	error in angle	datatype
1989	168	14:25: 8	2.45	+/- 0.15	300.0	+/- 0.5	SMM
1989	168	14:49:53	2.90	+/- 0.15	300.0	+/- 0.5	SMM
1989	168	15: 6:24	3.50	+/- 0.15	300.0	+/- 1.0	SMM
1989	168	15:57:46	5.50	+/- 0.15	300.0	+/- 1.0	SMM

****
Structure being measured:
Top of Loop
****

****
OUTPUT:
****

START TIME:

tstart=DOY168 13:33 from derivative = 0
Event begins at 1.96 Solar Radii
Origin defined at DOY168 14: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.648E-01 +/- 0.132E-01 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.209E+01 +/- 0.160E+00 [solar radii]
c(2) = 0.925E-02 +/- 0.513E-02 [radii/min]
c(2) = 0.107E+03 +/- 0.595E+02 [km/sec]
c(3) = 0.168E-03 +/- 0.341E-04 [radii/min**2]
c(3) = 0.648E-01 +/- 0.132E-01 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.22608E+00 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.79320E-01 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.72495E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.33568E-02 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.48255E-04 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.23036E-04 [radii/min**] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

ANGULAR ACCELERATION= 0.0000E+00 +/- 0.0000E+00[radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 300. +/- 0. [degrees]
a(2) = 0.000E+00 +/- 0.000E+00 [degrees/min]
a(2) = 0.000E+00 +/- 0.000E+00 [rad/sec]
a(3) = 0.000E+00 +/- 0.000E+00 [degrees/min**2]
a(3) = 0.000E+00 +/- 0.000E+00 [rad/sec**2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:
The TANGENTIAL velocity at 14:25 = 0. km/sec
The TOTAL velocity at 14:25 = 205. km/sec

The TANGENTIAL velocity at 14:49 = 0. km/sec
The TOTAL velocity at 14:49 = 301. km/sec

The TANGENTIAL velocity at 15: 6 = 0. km/sec
The TOTAL velocity at 15: 6 = 366. km/sec

The TANGENTIAL velocity at 15:57 = 0. km/sec
The TOTAL velocity at 15:57 = 565. km/sec

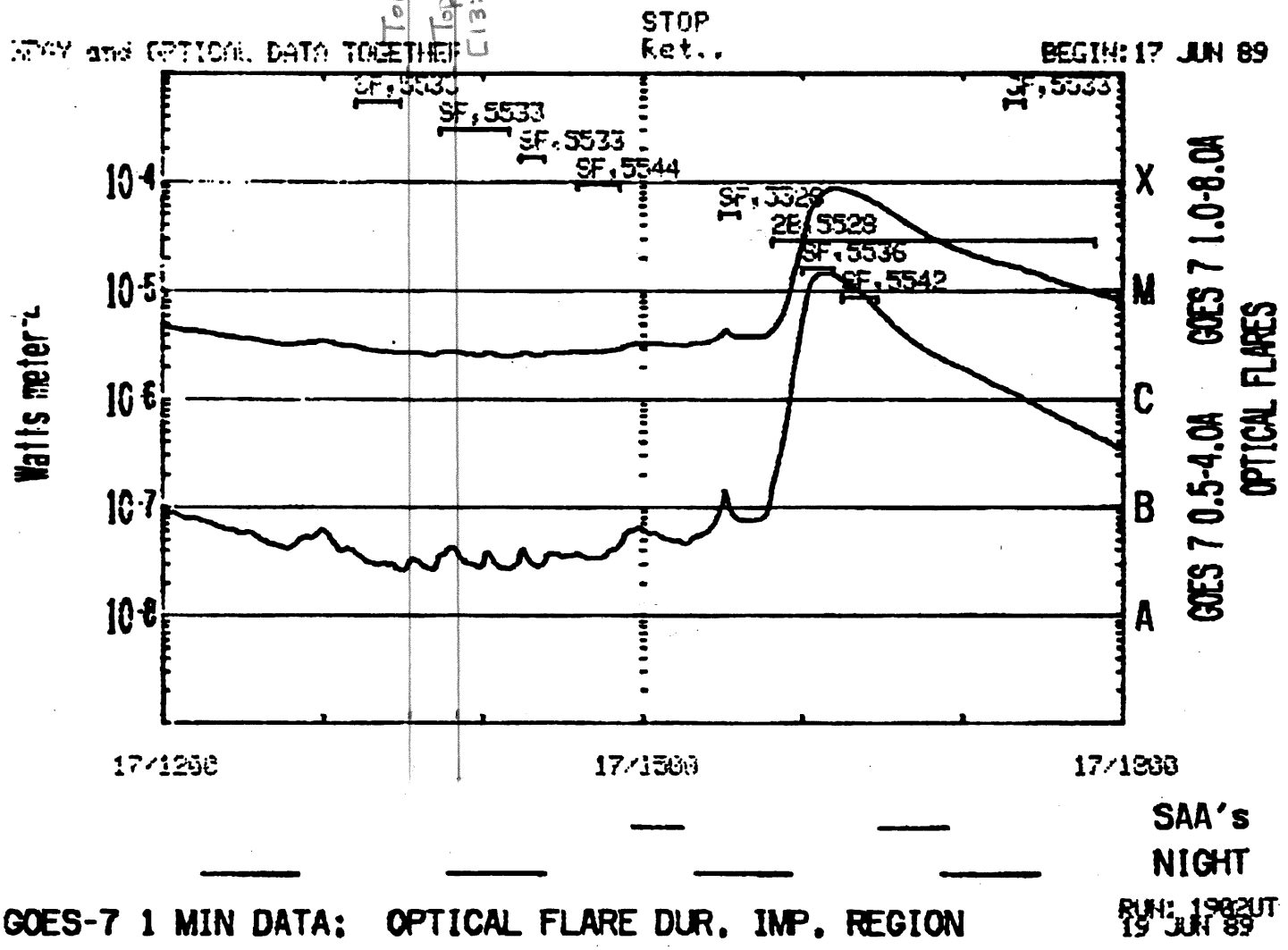
****
The following info is for estimating goodness of the fit
****

Fit is ok [ier=1]

Standard Deviation in the height = 1.35
Standard Deviation in start time measurement = 0.339E+02
Value of reduced Chi Squared returned from nllst2 = 0.420E-02
Reduced Chi Squared = 0.195E-01
Chi Squared = 0.195E-01
The probability for exceeding chi square = 0.948E+00

For a second order fit 3 correlation coefficients are given:
(Using equation of motion: r = a + bt + at**2)
The correlation between the data and the term linear in time = 0.9898E+00
The correlation between the data and the time**2 term = 0.9980E+00
0The correlation between the data and the complete equation of motion = 0.9985E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

1989 DOY 168



GOES-7 1 MIN DATA: OPTICAL FLARE DUR. IMP. REGION

RUN: 1902UT
19 JUN 89