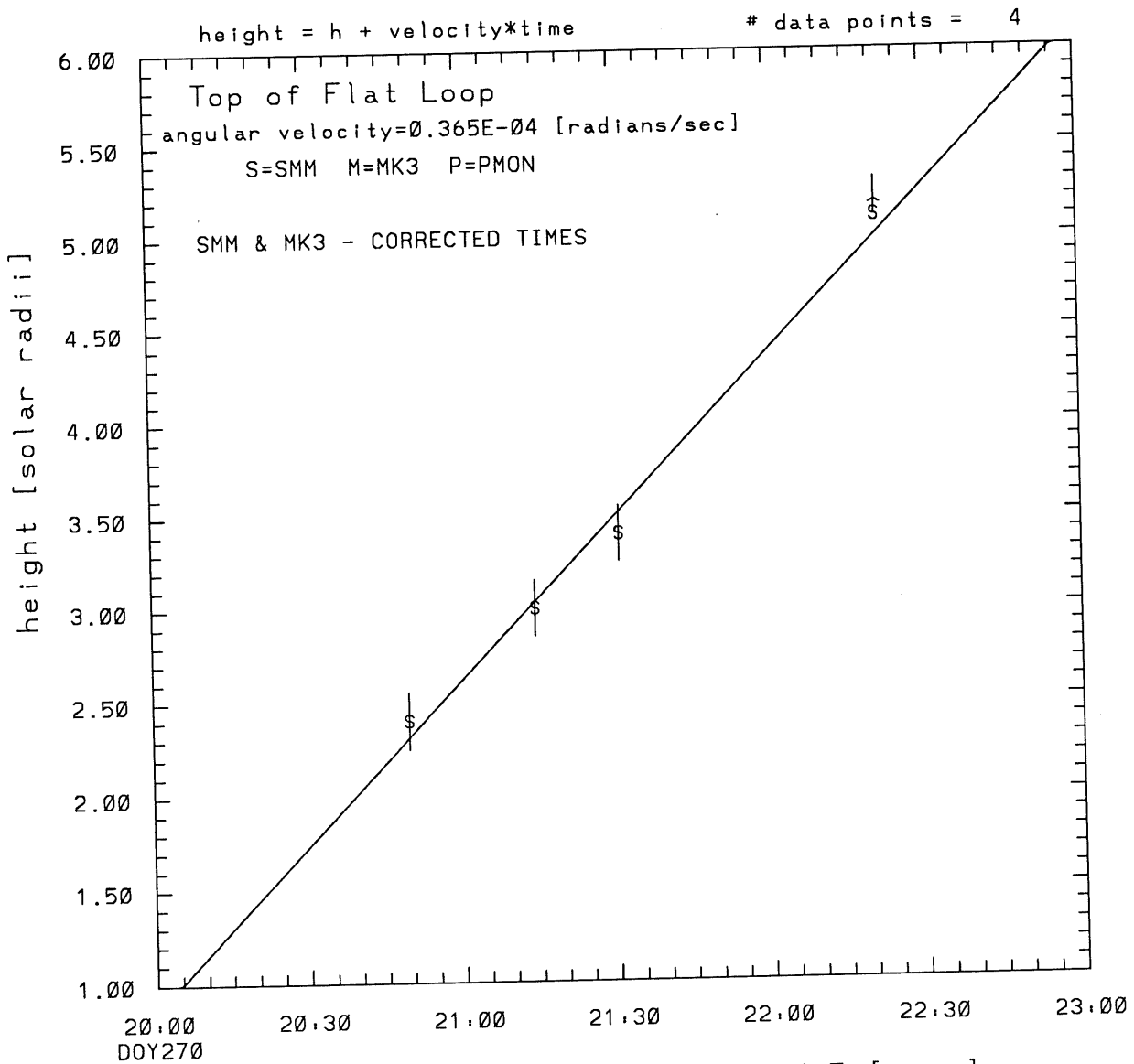
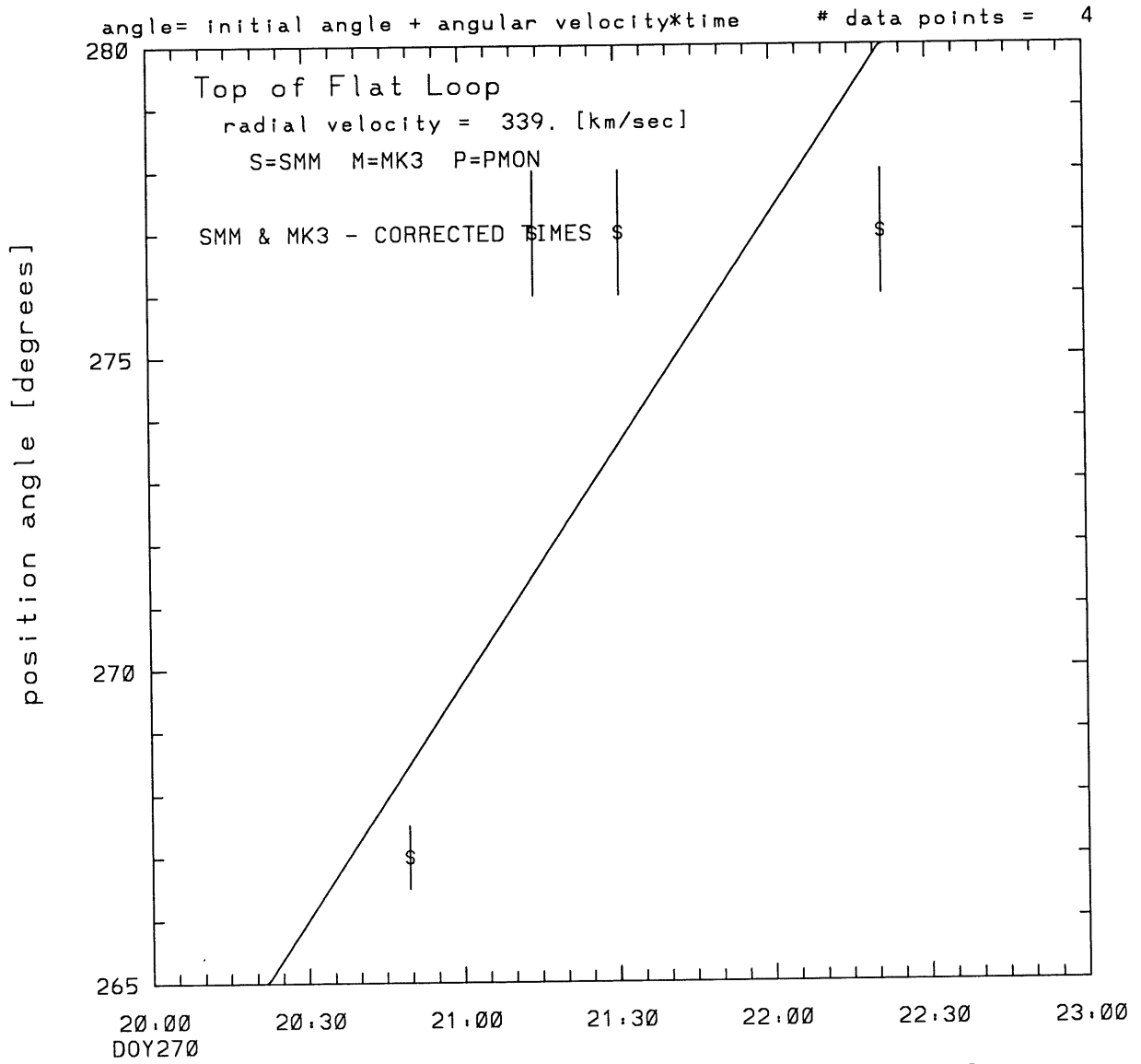


SMM C/P 1989 DOY270 274 +/- 7 degrees



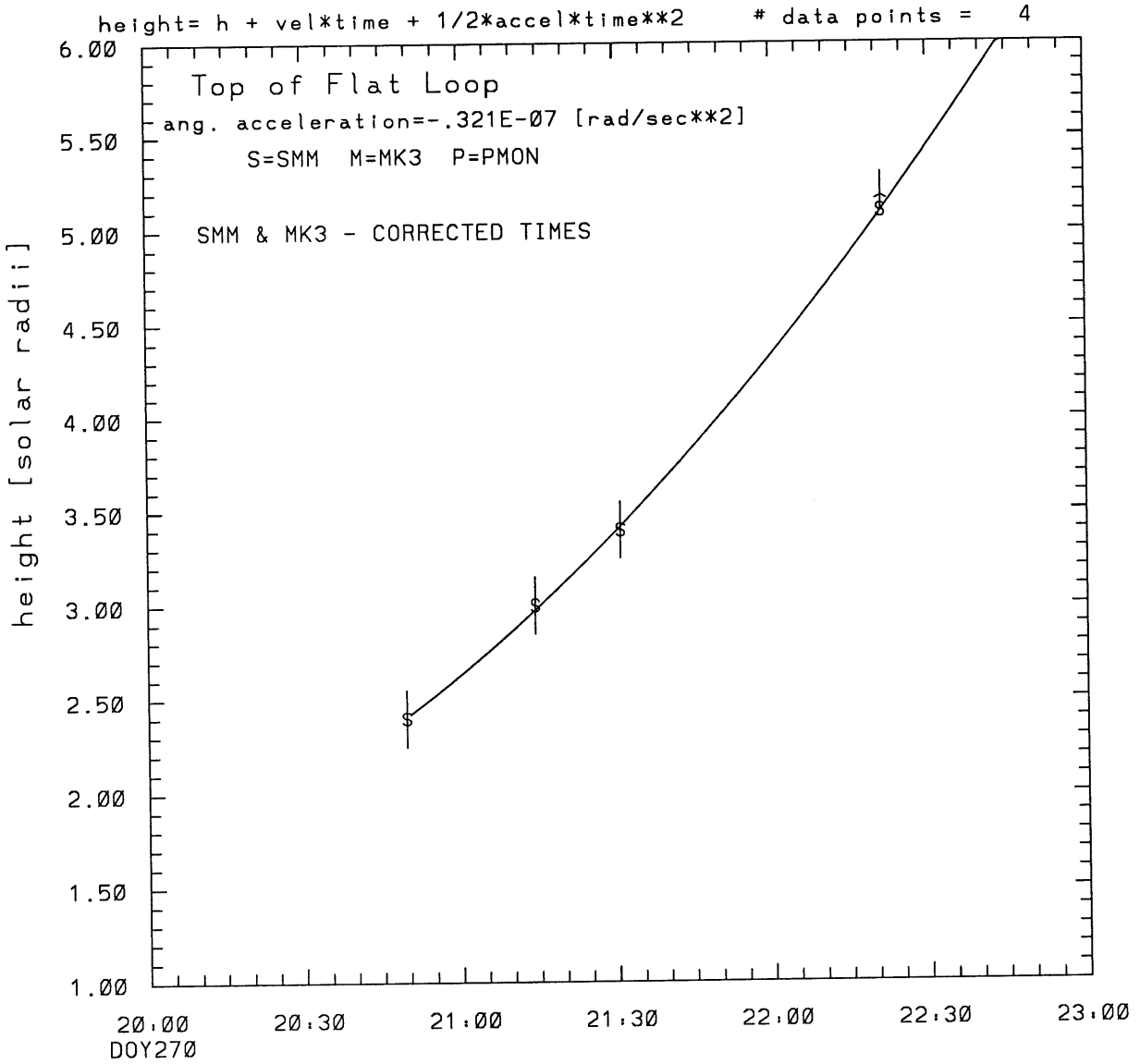
tstart=DOY270 20: 5 +/- 0.5 [min.]
radial velocity= 339. +/- 20. [km/sec]

SMM C/P 1989 DOY270 274 +/- 7 degrees



tstart=DOY270 20: 5 +/- 0.5 [min.]
angular velocity=0.365E-04 +/- 0.151E-04 [rad/sec]

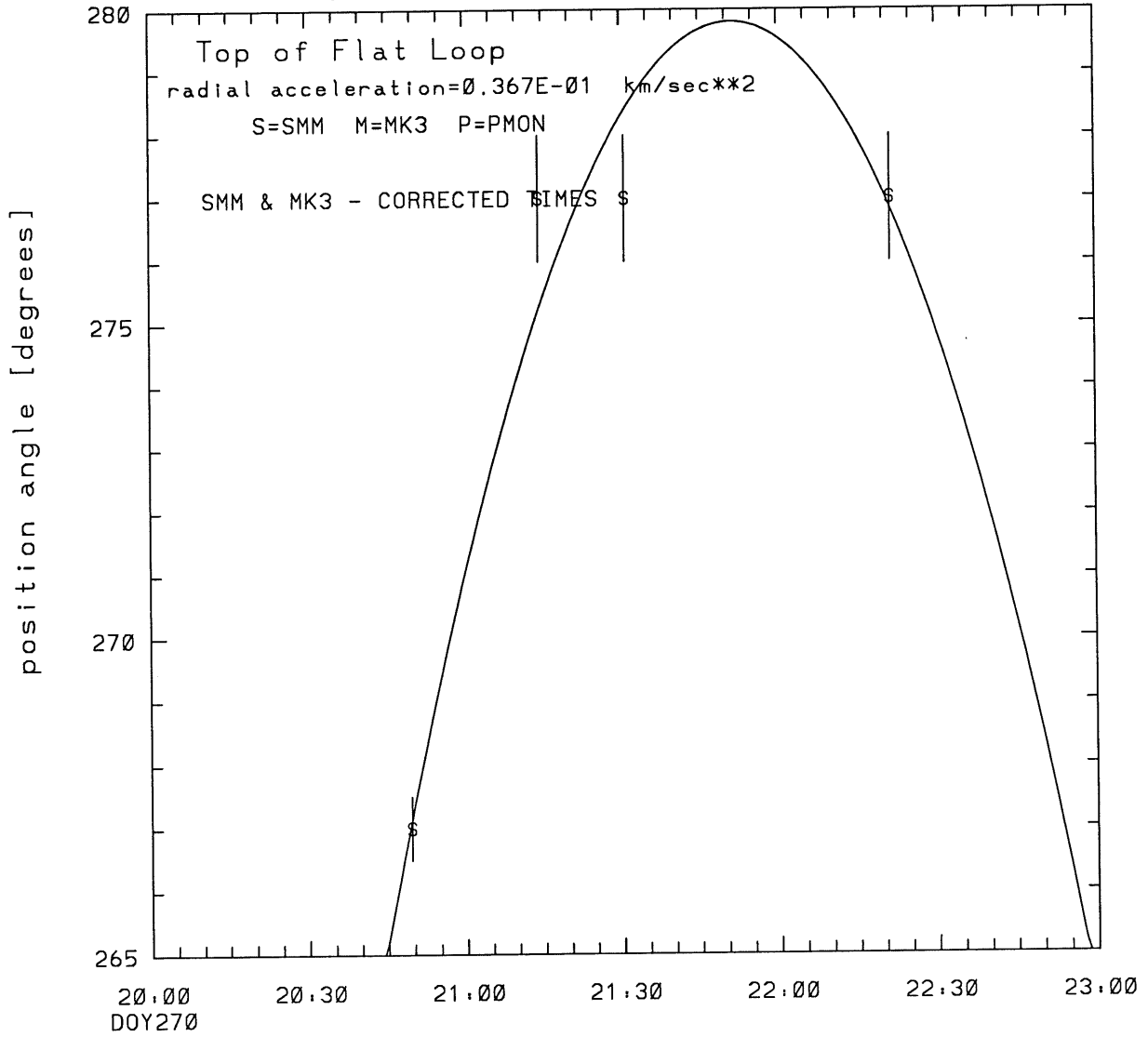
SMM C/P 1989 DOY270 274 +/- 7 degrees



tstart=DOY270 19: 1 from derivative=0
Event begins at 1.29 Solar Radii
radial acceleration = 0.0367 +/- 0.0049 [km/sec**2]

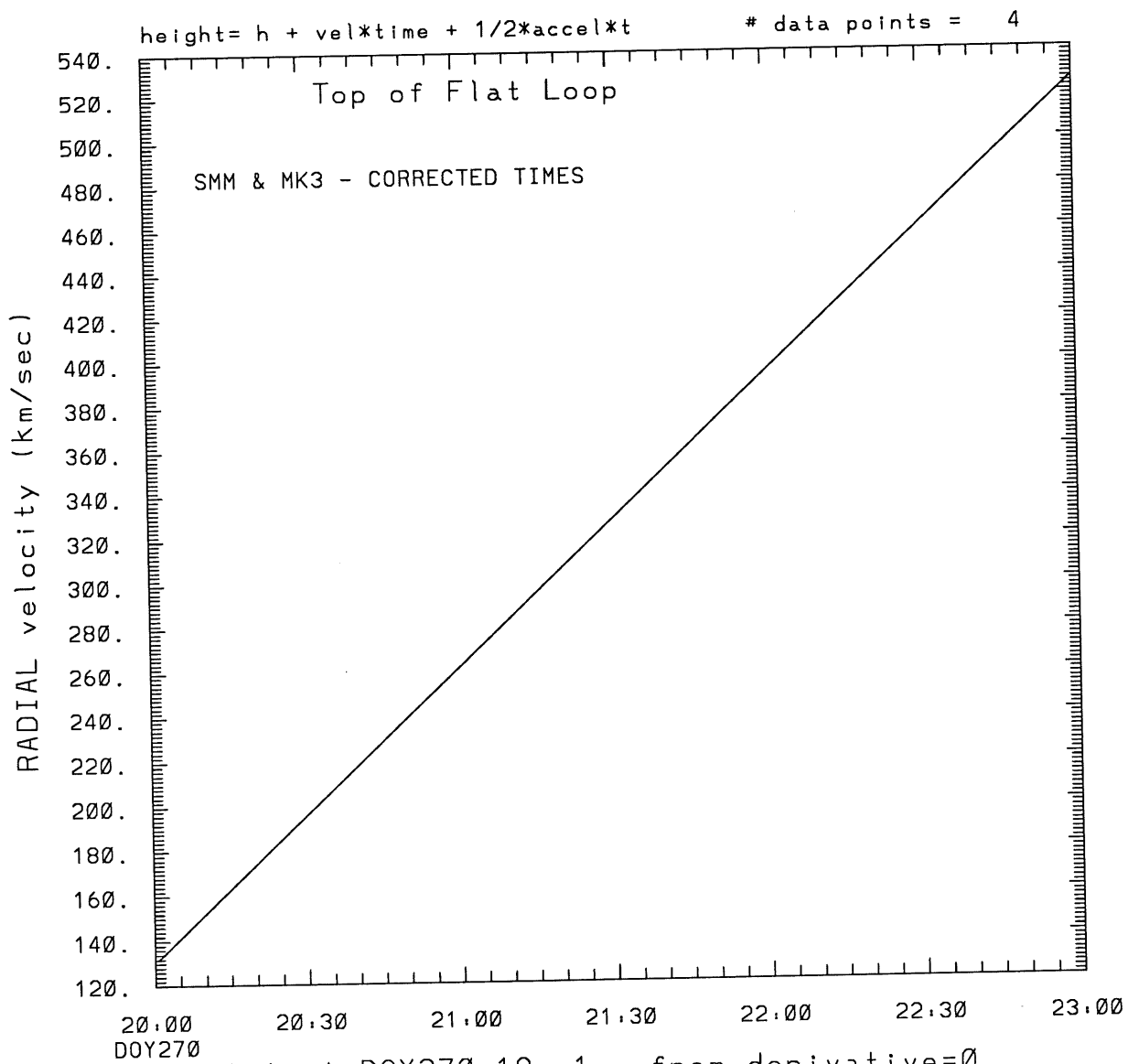
SMM C/P 1989 DOY270 274 +/- 7 degrees

angle = initial angle + angular velocity*time
+ 1/2 angular acceleration*time**2 # data points = 4



tstart=DOY270 19.1 from derivative=0
angular acceleration=-.321E-07 +/-0.706E-08 [rad/sec**2]

SMM C/P 1989 DOY270 274 +/- 7 degrees

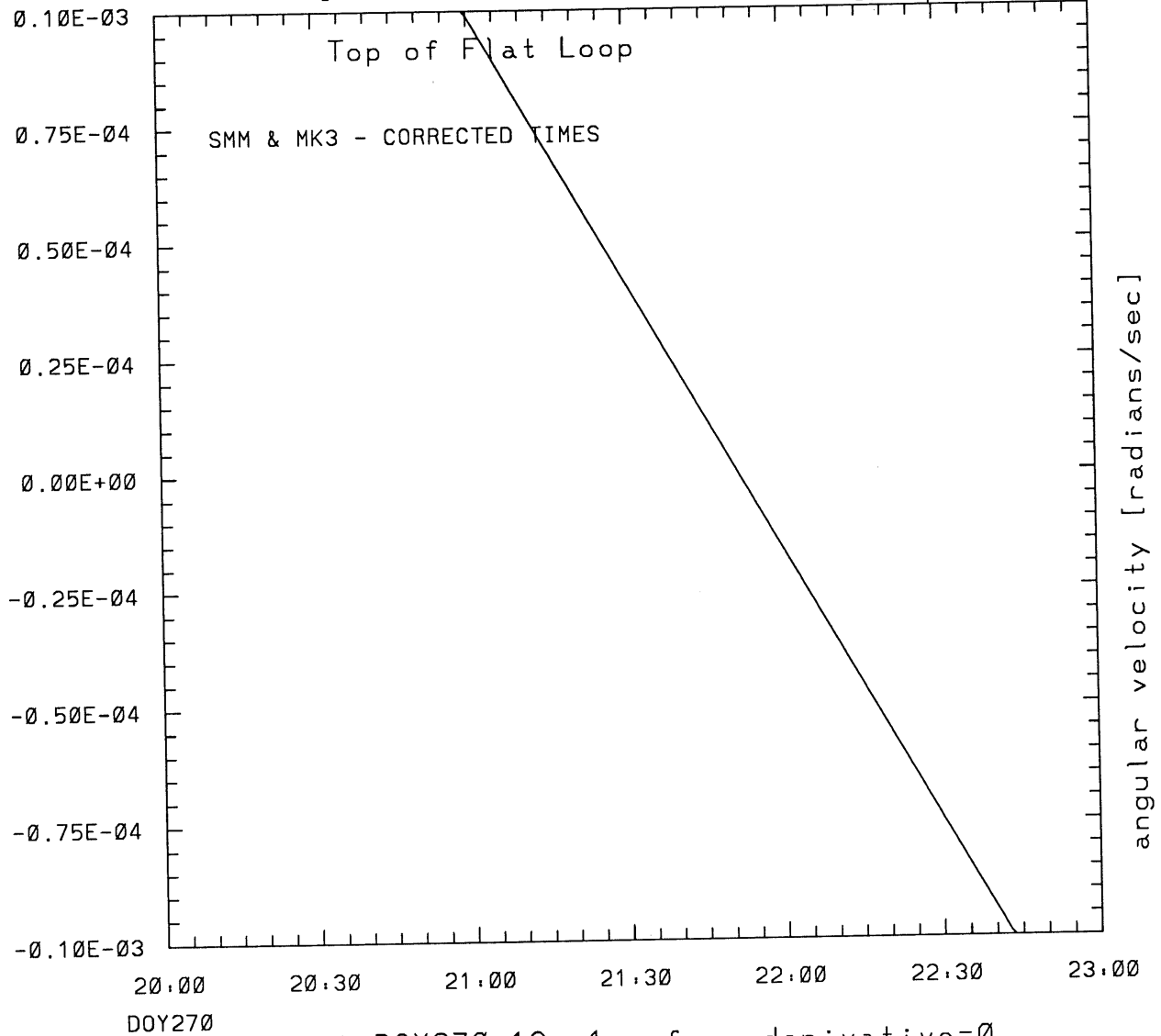


DOY270 tstart=DOY270 19: 1 from derivative=0
Event begins at 1.29 Solar Radii
radial acceleration= $0.367E-01$ km/sec**2

SMM C/P 1989 DOY270 274 +/- 7 degrees

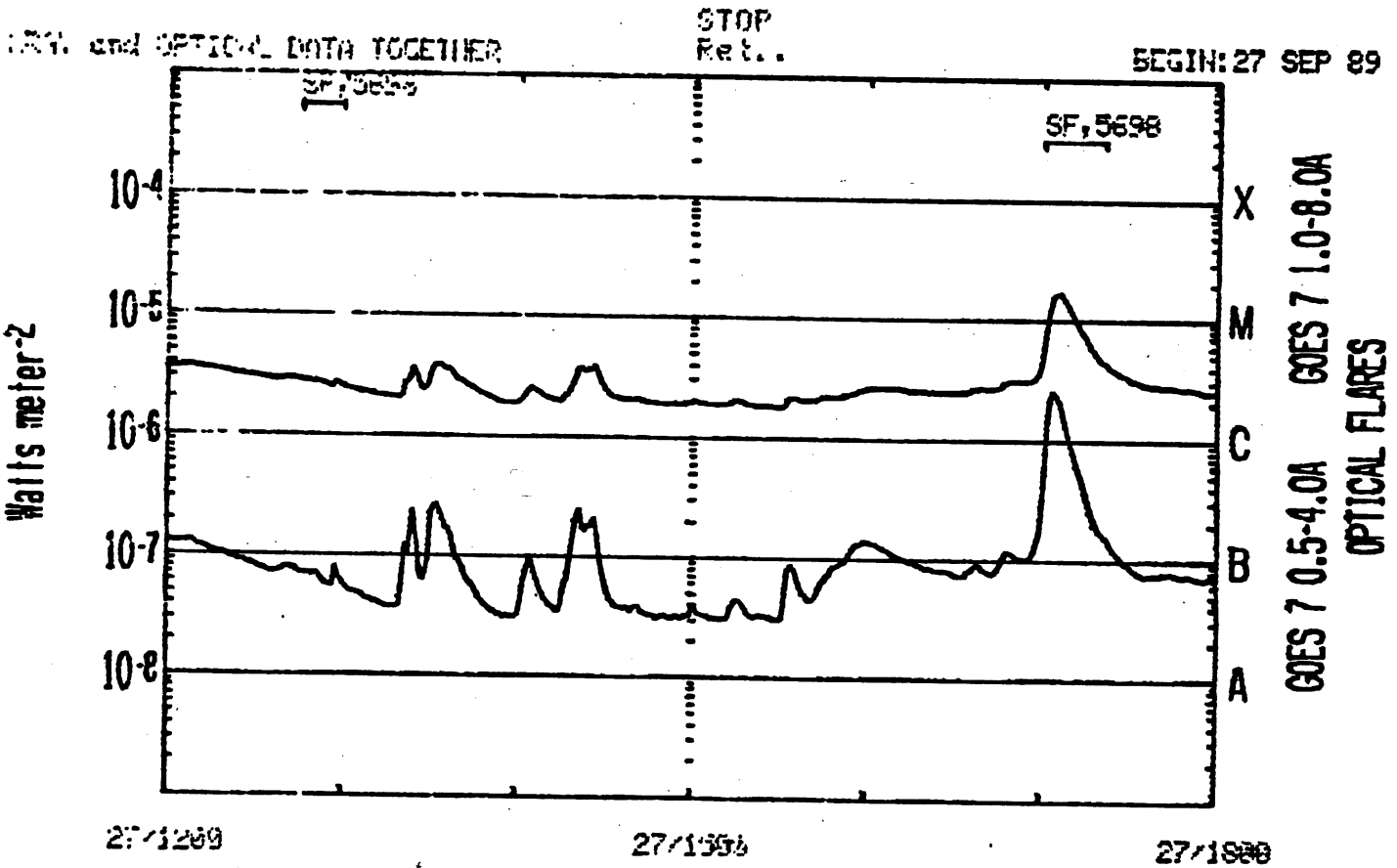
$$\text{angle} = \text{initial angle} + \text{angular velocity} * \text{time} + \frac{1}{2} \text{angular acceleration} * \text{time} ** 2$$

data points = 4



tstart=DOY270 19.1 from derivative=0
angular acceleration=-.321E-07 +/-
0.706E-08 [rad/sec**2]

1989 DOT 270



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

SAA's NIGHT
RUN: 2136UT
29 SEP 89

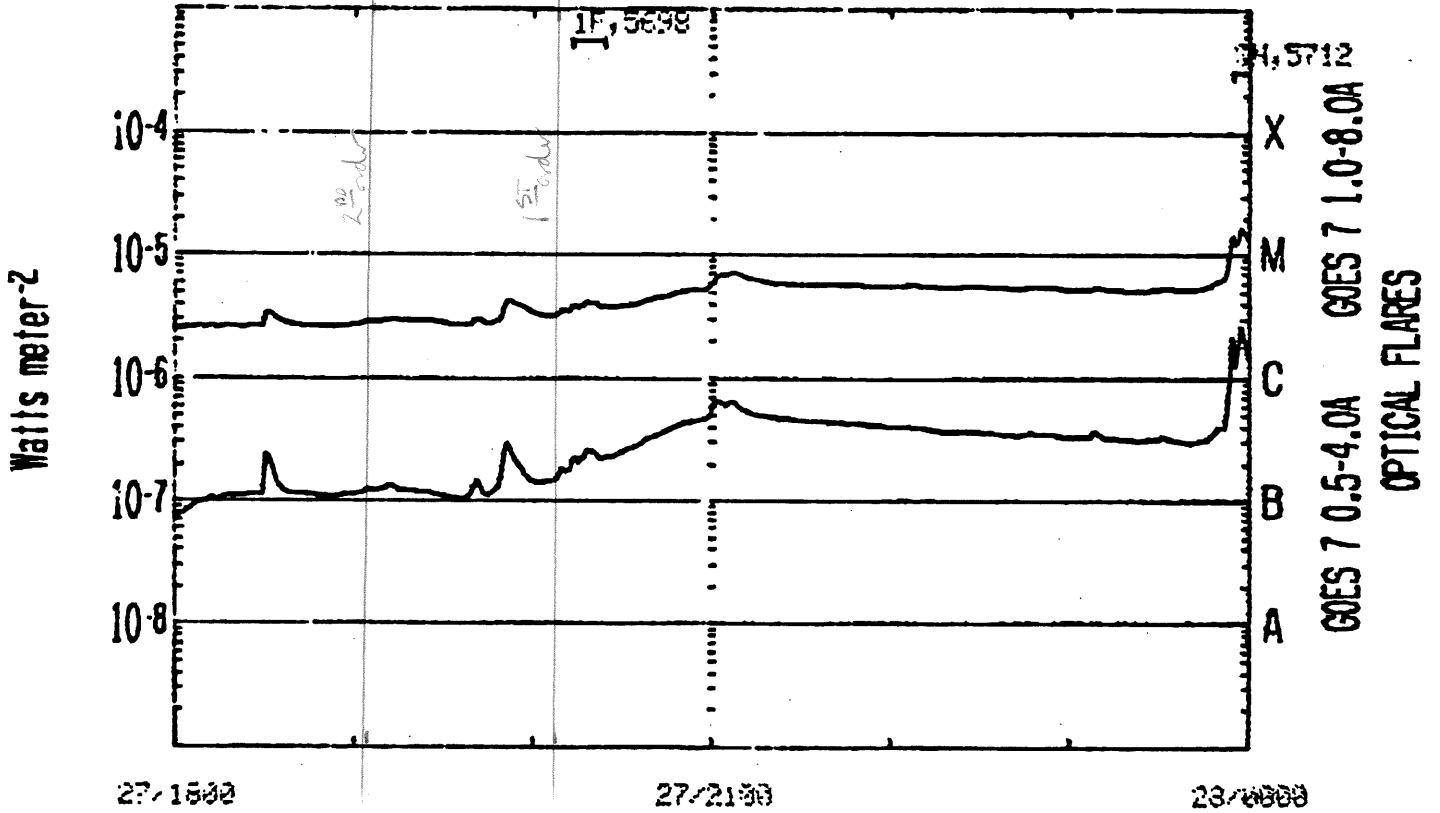
→ see next page ←

1989 Day 270

OPTICAL DATA TOGETHER

STOP Ret..

BEGIN: 27 SEP 89



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

This is a 1 order run

INPUT:

year	day	time	radii	radius	error in angle	error in angle	datatype	
1989	270	20:49:30	2.40 +/-	0.15	267.0 +/-	0.5	SMM	
1989	270	21:14:16	3.00 +/-	0.15	277.0 +/-	1.0	SMM	
1989	270	21:30:46	3.40 +/-	0.15	277.0 +/-	1.0	SMM	
1989	270	22:21:14	5.10 +/-	0.20	277.0 +/-	1.0	SMM	THIS POINT IS A LOI

Structure being measured:
Top of Flat Loop

OUTPUT:

START TIME:

Event began at $t = 0 + 0.462E+01 +/- 0.476E+00$ [minutes]
In more convenient units:
Event began at DOY 270 20: 5 +/- 0.476E+00 [minutes]

Origin defined at DOY270 20: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 339. +/- 20. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.865E+00 +/- 0.154E+00 [solar radii]
c(2) = 0.292E-01 +/- 0.176E-02 [radii/min]
c(2) = 0.339E+03 +/- 0.204E+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)= 0.18634E+00 [radii] see Bevington pg. 114
error in c(2)= 0.19601E-02 [radii/min] see Bevington pg. 114

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.3655E-04 +/- 0.1512E-04[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 262. +/- 4. [degrees]
a(2) = 0.126E+00 +/- 0.520E-01 [degrees/min]
a(2) = 0.365E-04 +/- 0.151E-04 [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 RADIAL velocity at 20:49 = 339. km/sec

The RADIAL velocity at 21:14 = 339. km/sec

The RADIAL velocity at 21:30 = 339. km/sec

The RADIAL velocity at 22:21 = 339. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 1.16
Standard Deviation in start time measurement = 0.336E+02
Error in time = 0.63721E+01 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.110E-01
Reduced Chi Squared = 0.494E-01
Chi Squared = 0.989E-01
The probability for exceeding chi square = 0.989E+00

The correlation coefficient = 0.996E+00
The probability that no LINEAR correlation exists between the variables = 0.4065]
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

This is a 2 order run

INPUT:

year	day	time	radii	radius	error in angle	error in angle	datatype	
1989	270	20:49:30	2.40 +/- 0.15	267.0 +/- 0.5			SMM	
1989	270	21:14:16	3.00 +/- 0.15	277.0 +/- 1.0			SMM	
1989	270	21:30:46	3.40 +/- 0.15	277.0 +/- 1.0			SMM	
1989	270	22:21:14	5.10 +/- 0.20	277.0 +/- 1.0			SMM	THIS POINT IS A LOI

Structure being measured:
Top of Flat Loop

OUTPUT:

START TIME:

tstart=DOY270 19: 1 from derivative = 0
Event begins at 1.29 Solar Radii
Origin defined at DOY270 20: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.367E-01 +/- 0.490E-02 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.162E+01 +/- 0.107E+00 [solar radii]
c(2) = 0.112E-01 +/- 0.244E-02 [radii/min]
c(2) = 0.130E+03 +/- 0.283E+02 [km/sec]
c(3) = 0.948E-04 +/- 0.127E-04 [radii/min**2]
c(3) = 0.367E-01 +/- 0.490E-02 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.14944E+00 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.60765E-01 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.33722E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.15761E-02 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.17095E-04 [radii/min**2] Bevington pg 154 (8-30)
Exact error in c(3) = 0.81619E-05 [radii/min**2] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

ANGULAR ACCELERATION= -0.3212E-07 +/- 0.7058E-08[radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 239. +/- 5. [degrees]
a(2) = 0.738E+00 +/- 0.136E+00 [degrees/min]
a(2) = 0.215E-03 +/- 0.395E-04 [rad/sec]
a(3) = -0.331E-02 +/- 0.728E-03 [degrees/min**2]
a(3) = -0.321E-07 +/- 0.706E-08 [rad/sec**2]

The RADIAL velocity at 20:49 = 239. km/sec

The RADIAL velocity at 21:14 = 294. km/sec

The RADIAL velocity at 21:30 = 330. km/sec

The RADIAL velocity at 22:21 = 441. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 1.16
Standard Deviation in start time measurement = 0.336E+02
Value of reduced Chi Squared returned from nllst2 = 0.570E-03
Reduced Chi Squared = 0.239E-02
Chi Squared = 0.239E-02
The probability for exceeding chi square = 0.981E+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 = 0.9035E+00
The correlation between the data and the time**2 term = 0.8868E+00
The correlation between the data and the complete equation of motion=0.9995E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]