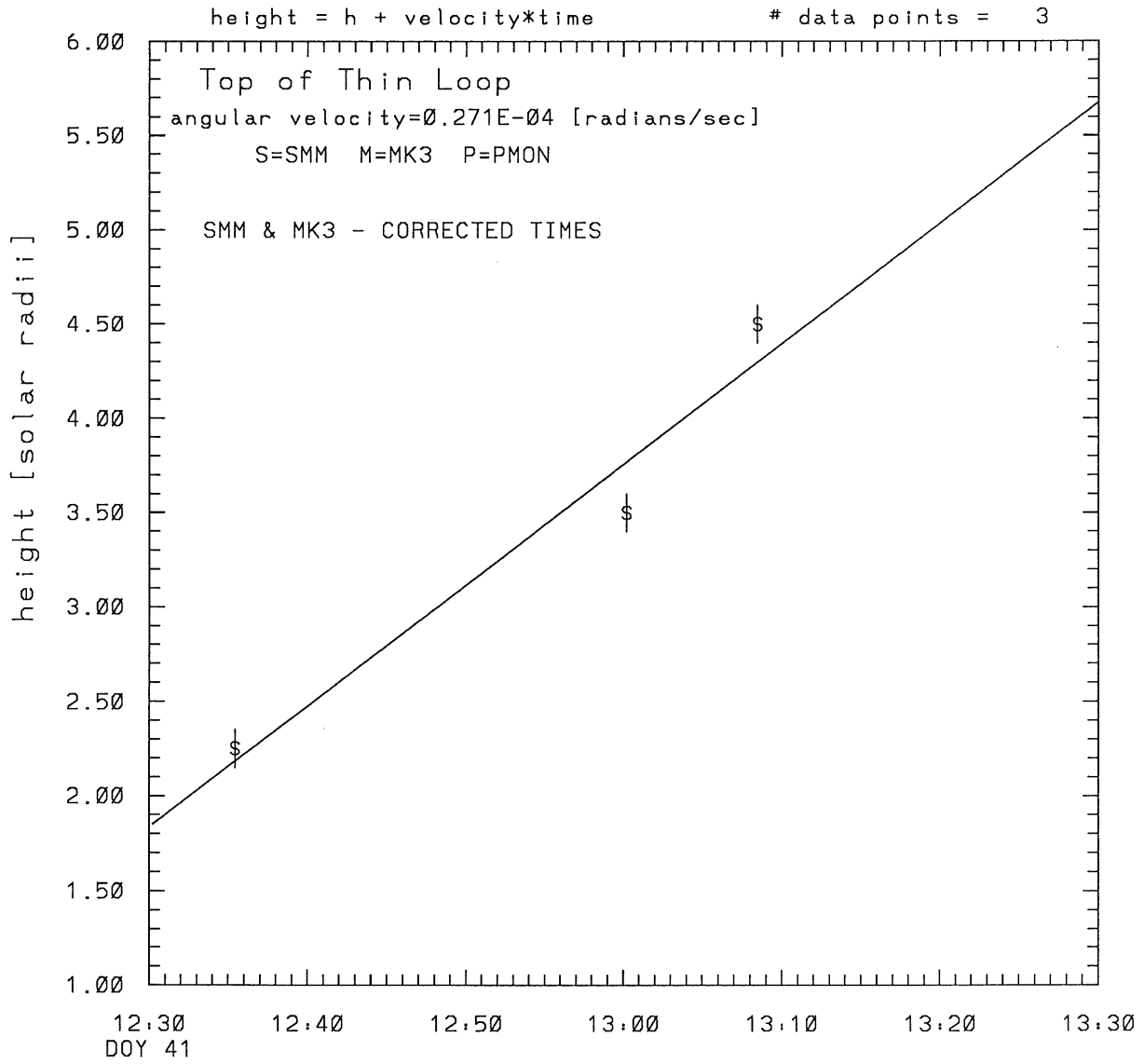


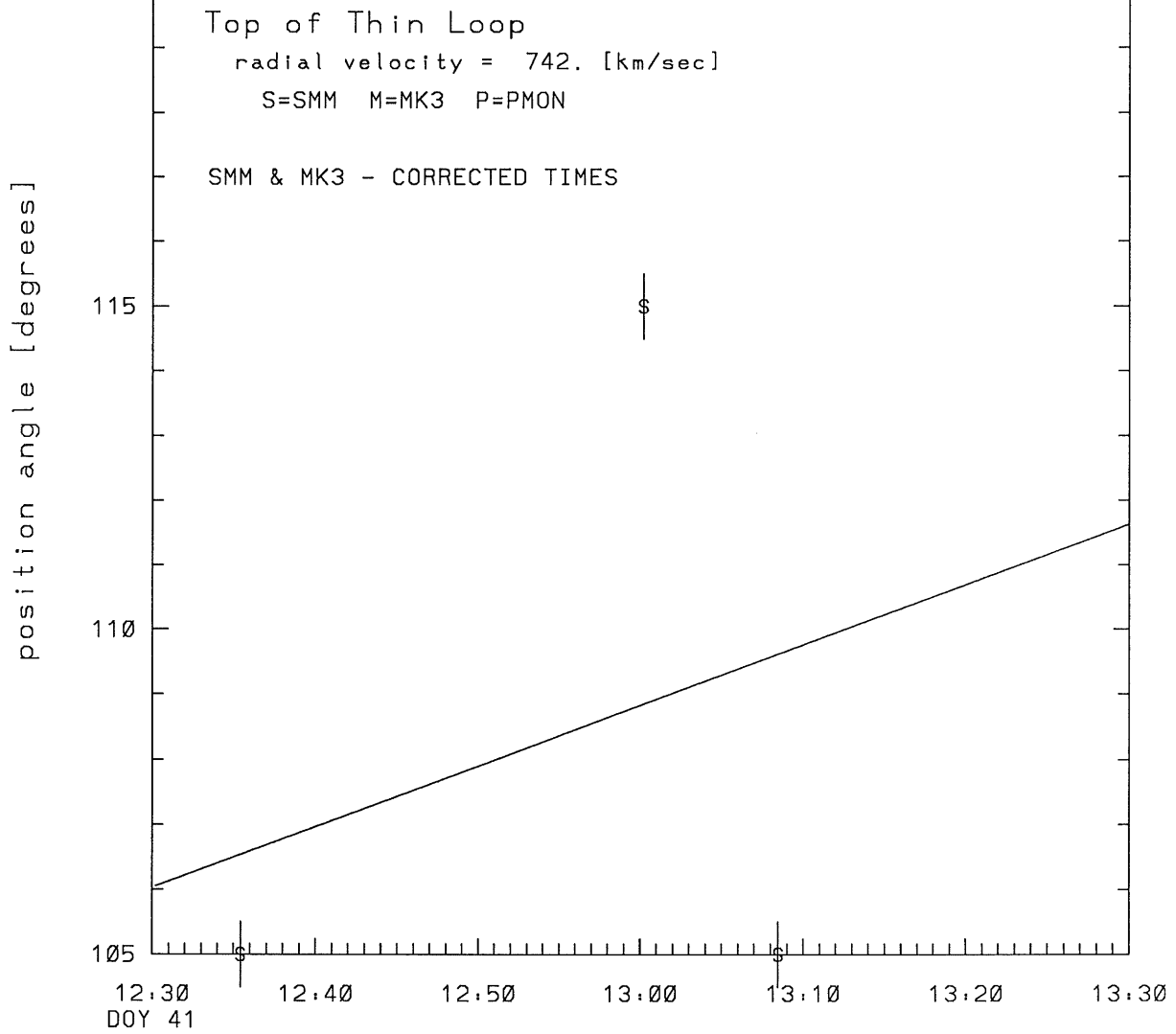
SMM C/P 1989 DOY 41 108 +/- 7 degrees



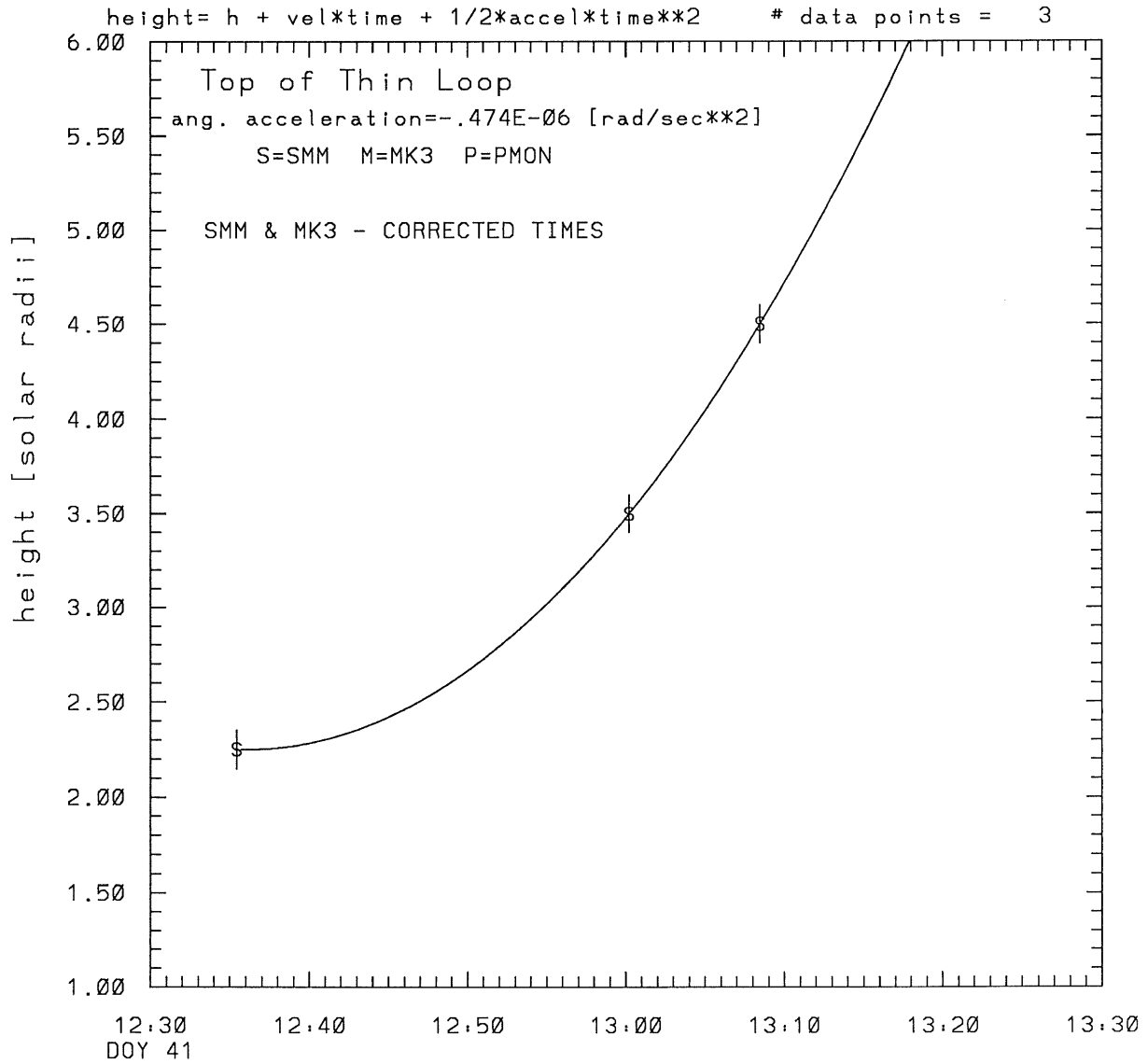
tstart=DOY 41 12:17 +/- 1.3 [min.]
radial velocity= 742. +/- 116. [km/sec]

SMM C/P 1989 DOY 41 108 +/- 7 degrees

angle = initial angle + angular velocity * time # data points = 3



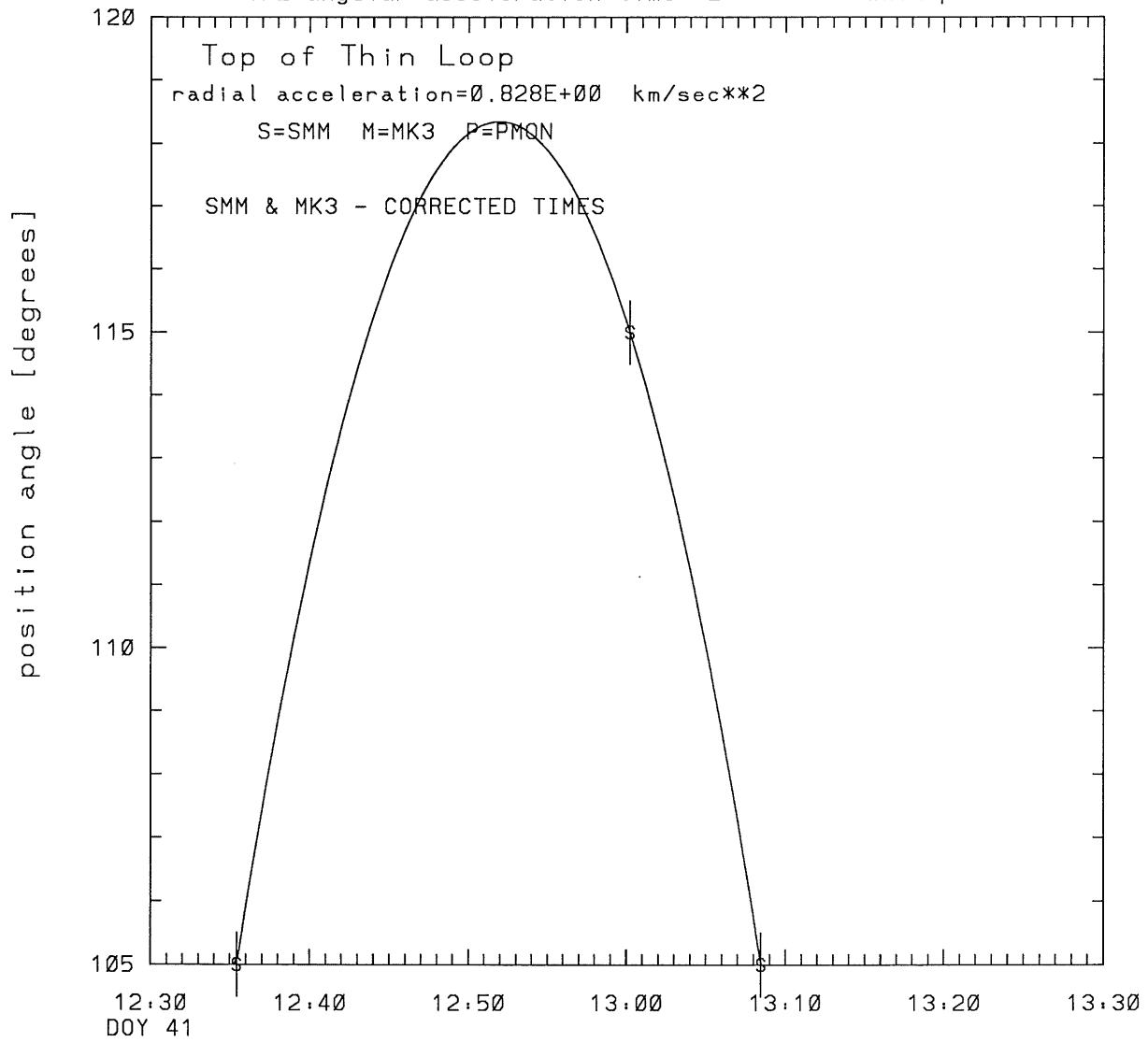
SMM C/P 1989 DOY 41 108 +/- 7 degrees



tstart=DOY 41 12:36 from derivative=0
Event begins at 2.25 Solar Radii
radial acceleration = 0.8284 ± 0.0000 [km/sec**2]

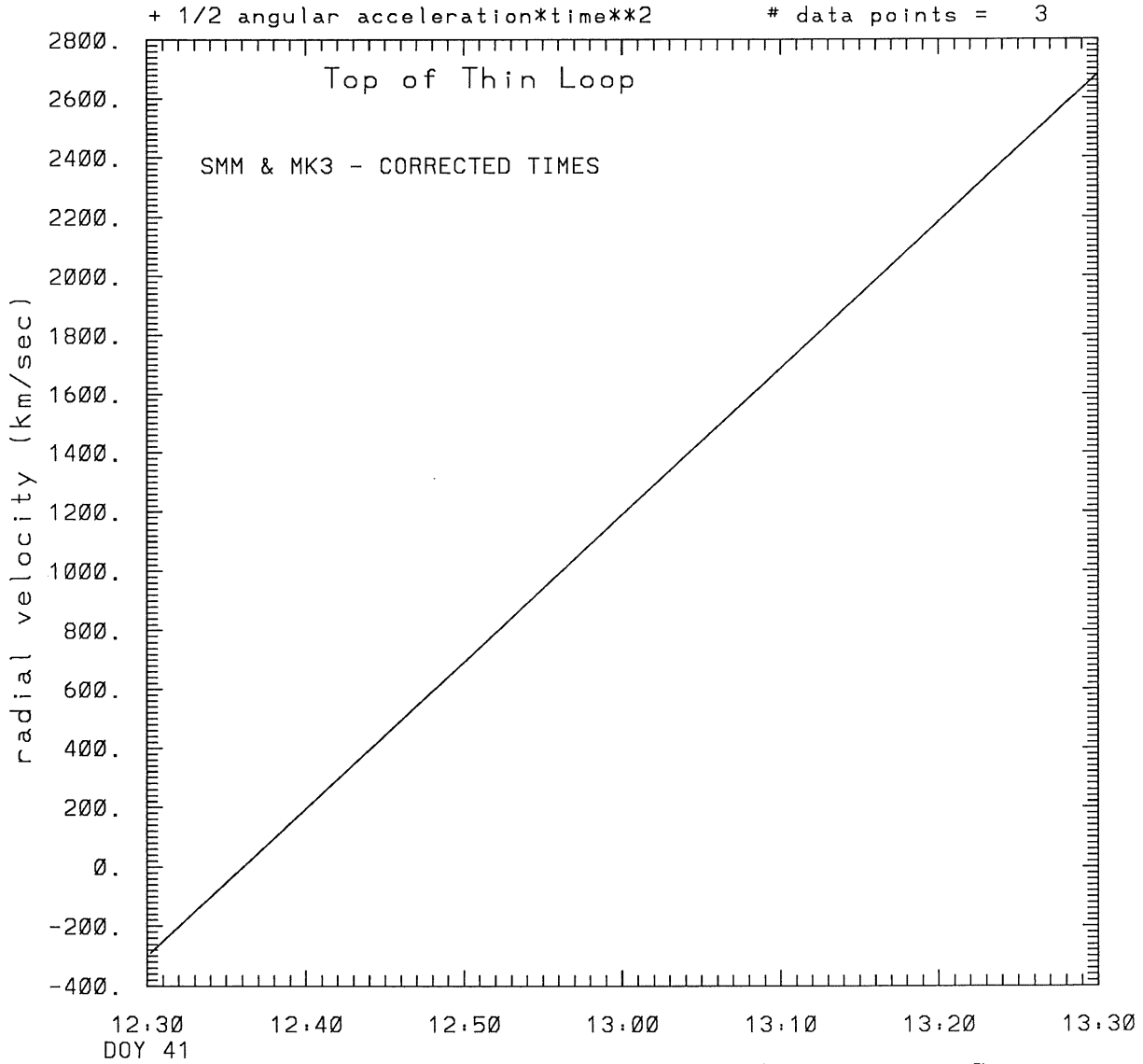
SMM C/P 1989 DOY 41 108 +/- 7 degrees

angle = initial angle + angular velocity*time
+ 1/2 angular acceleration*time**2 # data points = 3



Event begins at 2.25 Solar Radii
angular acceleration=-.474E-06 +/-0.103E-11 [rad/sec**2]

SMM C/P 1989 DOY 41 108 +/- 7 degrees

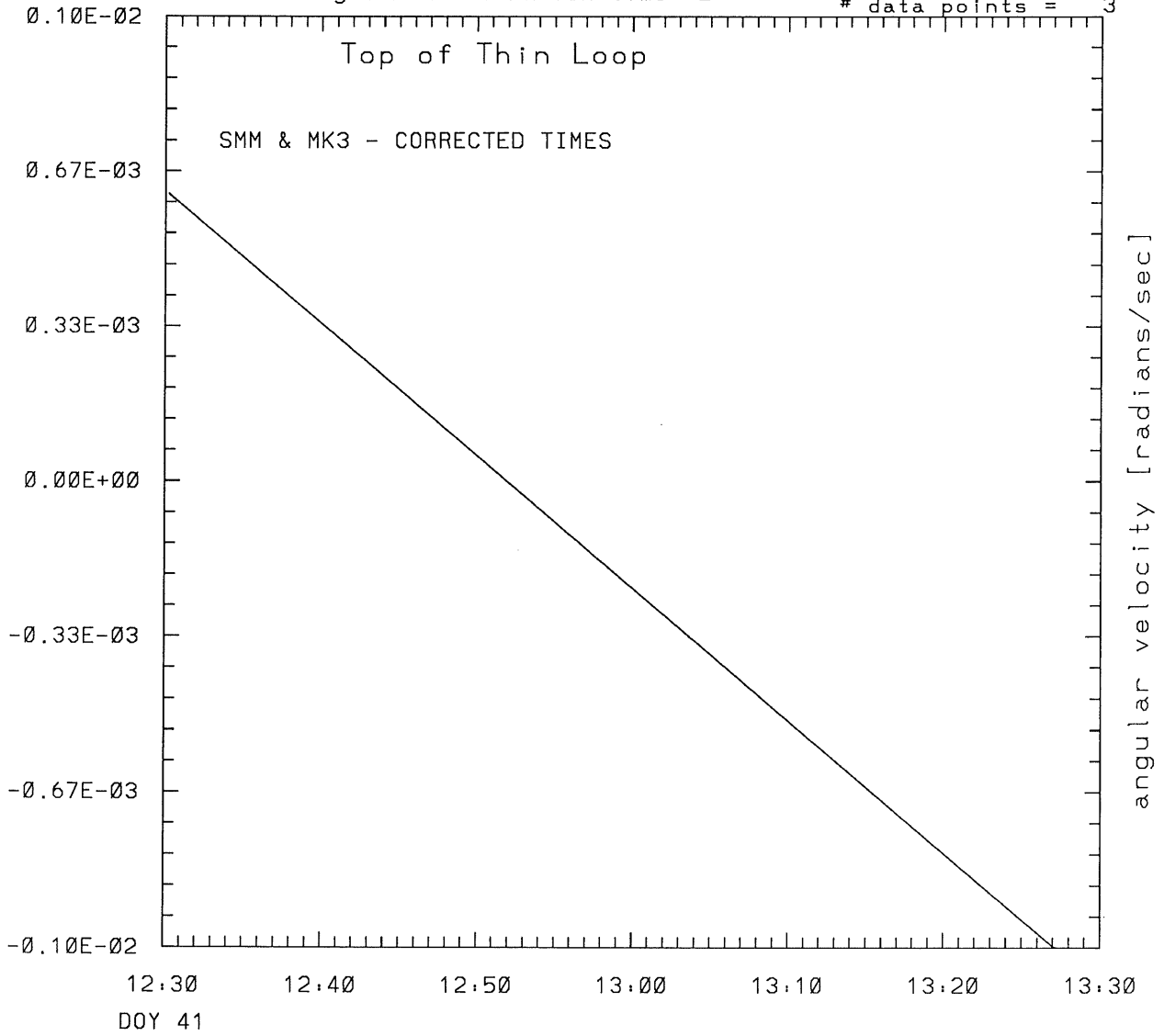


tstart=DOY 41 12:36 from derivative=0
Event begins at 2.25 Solar Radii
radial acceleration=0.828E+00 km/sec**2

SMM C/P 1989 DOY 41 108 +/- 7 degrees

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

data points = 3



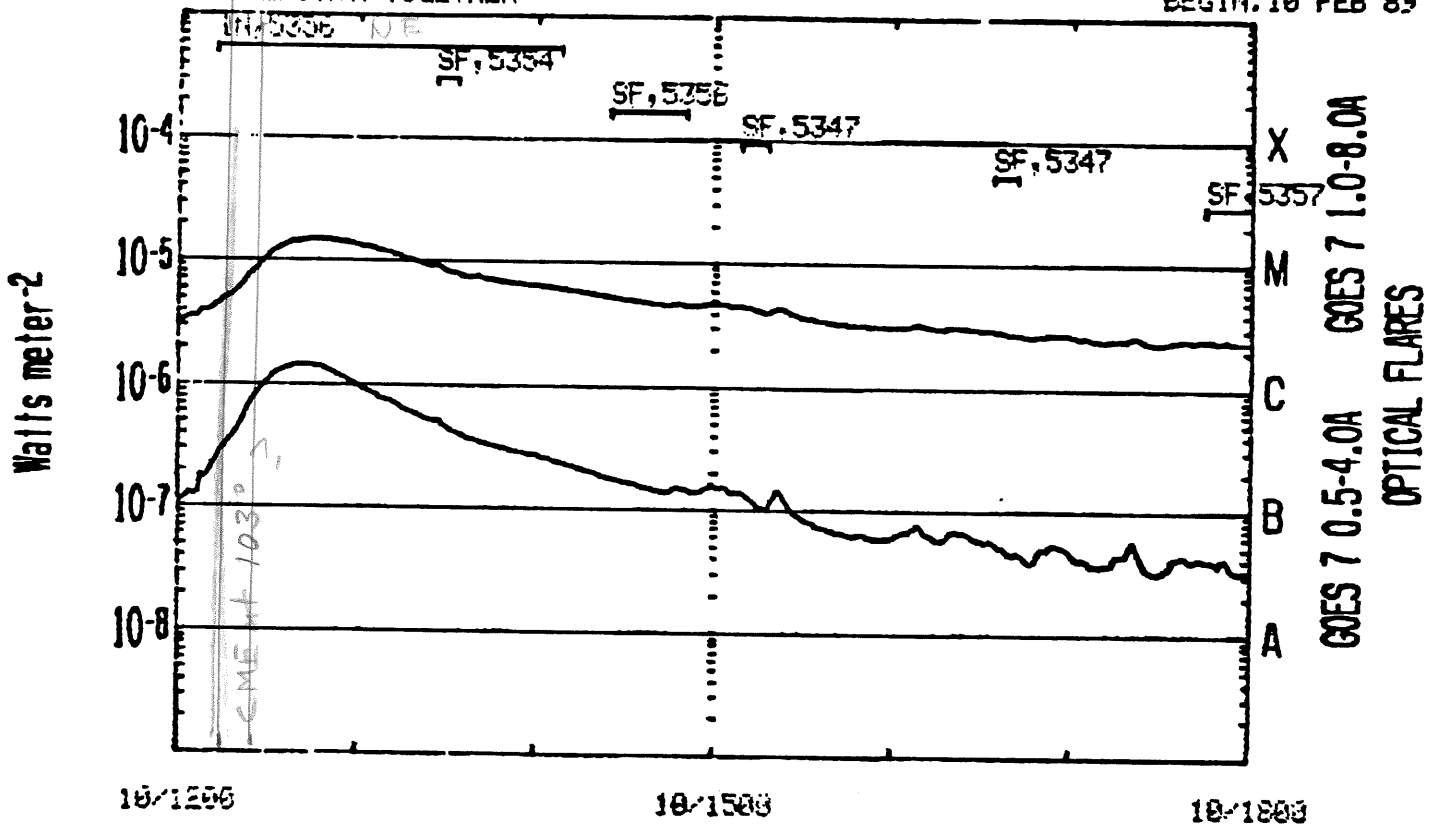
angular acceleration = $-.474E-06 \pm 0.103E-11$ [rad/sec**2]

1989 Day 41

Top of Thin Loop
[12:16] 1st order
[12:24] 2nd order

RAY and OPTICAL DATA TOGETHER

BEGIN: 10 FEB 89



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

RUN:

This is a 1 order run

INPUT:

year	day	time	radii	radius	error in angle	error in angle	datatype
1989	41	12:35:25	2.25 +/- 0.10	105.0 +/- 0.5		SMM	
1989	41	13: 0:13	3.50 +/- 0.10	115.0 +/- 1.0		SMM	
1989	41	13: 8:28	4.50 +/- 0.10	105.0 +/- 1.0		SMM	

Structure being measured:
Top of Thin Loop

OUTPUT:

START TIME:

Event began at t = 0 + -0.131E+02 +/- 0.132E+01 [minutes]
In more convenient units:
Event began at DOY 41 12:17 +/- 0.132E+01 [minutes]
Origin defined at DOY 41 12:30

RADIAL INFORMATION:

RADIAL VELOCITY = 742. +/- 116. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.184E+01 +/- 0.284E+00 [solar radii]
c(2) = 0.640E-01 +/- 0.999E-02 [radii/min]
c(2) = 0.742E+03 +/- 0.116E+03 [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)= 0.40160E+00 [radii] see Bevington pg. 114
error in c(2)= 0.14134E-01 [radii/min] see Bevington pg. 114

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.3836E-04 +/- 0.4828E-04[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 105. +/- 3. [degrees]
a(2) = 0.132E+00 +/- 0.166E+00 [degrees/min]
a(2) = 0.384E-04 +/- 0.483E-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 TANGENTIAL, RADIAL AND TOTAL SPEEDS AT EACH DATA POINT ARE:

The TANGENTIAL velocity at 12:35 = 60. km /sec
The RADIAL velocity at 12:35 = 742. km/sec

The TOTAL velocity at 12:35 = 745. km/sec

The TANGENTIAL velocity at 13: 0 = 93. km /sec

The RADIAL velocity at 13: 0 = 742. km/sec

The TOTAL velocity at 13: 0 = 748. km/sec

The TANGENTIAL velocity at 13: 8 = 120. km /sec

The RADIAL velocity at 13: 8 = 742. km/sec

The TOTAL velocity at 13: 8 = 752. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 1.13

Standard Deviation in start time measurement = 0.140E+02

Error in time = 0.53730E+01 using best fit method

See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.591E-01

Reduced Chi Squared = 0.273E+00

Chi Squared = 0.273E+00

The probability for exceeding chi square = 0.808E+00

The correlation coefficient = 0.976E+00

The probability that no LINEAR correlation exists between the variables = 0.13841

SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

This is a 2 order run

INPUT:

year	doy	time	radii	radius	error in angle	error in angle	datatype
1989	41	12:35:25	2.25 +/-	0.10	105.0 +/-	0.5	SMM
1989	41	13: 0:13	3.50 +/-	0.10	115.0 +/-	1.0	SMM
1989	41	13: 8:28	4.50 +/-	0.10	105.0 +/-	1.0	SMM

Structure being measured:
Top of Thin Loop

OUTPUT:

START TIME:

tstart=DOY 41 12:36 from derivative = 0
Event begins at 2.25 Solar Radii
Origin defined at DOY 41 12:30

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.828E+00 +/- 0.970E-05 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.233E+01 +/- 0.743E-05 [solar radii]
c(2) = -0.259E-01 +/- 0.107E-05 [radii/min]
c(2) = -0.301E+03 +/- 0.124E-01 [km/sec]
c(3) = 0.214E-02 +/- 0.251E-07 [radii/min**2]
c(3) = 0.828E+00 +/- 0.970E-05 [km/sec**2]

ANGULAR INFORMATION:

ANGULAR ACCELERATION= -0.4739E-06 +/- 0.1285E-11[radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 95. +/- 0. [degrees]
a(2) = 0.214E+01 +/- 0.549E-05 [degrees/min]
a(2) = 0.624E-03 +/- 0.160E-08 [rad/sec]
a(3) = -0.489E-01 +/- 0.133E-06 [degrees/min**2]
a(3) = -0.474E-06 +/- 0.128E-11 [rad/sec**2]

THE TANGENTIAL, RADIAL AND TOTAL SPEEDS AT EACH DATA POINT ARE:

The TANGENTIAL velocity at 12:35 = 735. km/sec
The RADIAL velocity at 12:35 = -32. km/sec

The TOTAL velocity at 12:35 = -735. km/sec

The TANGENTIAL velocity at 13: 0 = -572. km/sec
The RADIAL velocity at 13: 0 = 1201. km/sec

The TOTAL velocity at 13: 0 = 1330. km/sec

The TANGENTIAL velocity at 13: 8 = -1470. km/sec

The RADIAL velocity at 13: 8 = 1611. km/sec

The TOTAL velocity at 13: 8 = 2181. km/sec

The following info is for estimating goodness of the fit

Number data points = number of coefficients. No error analysis is possible.

Correlation coefficient is not computable!