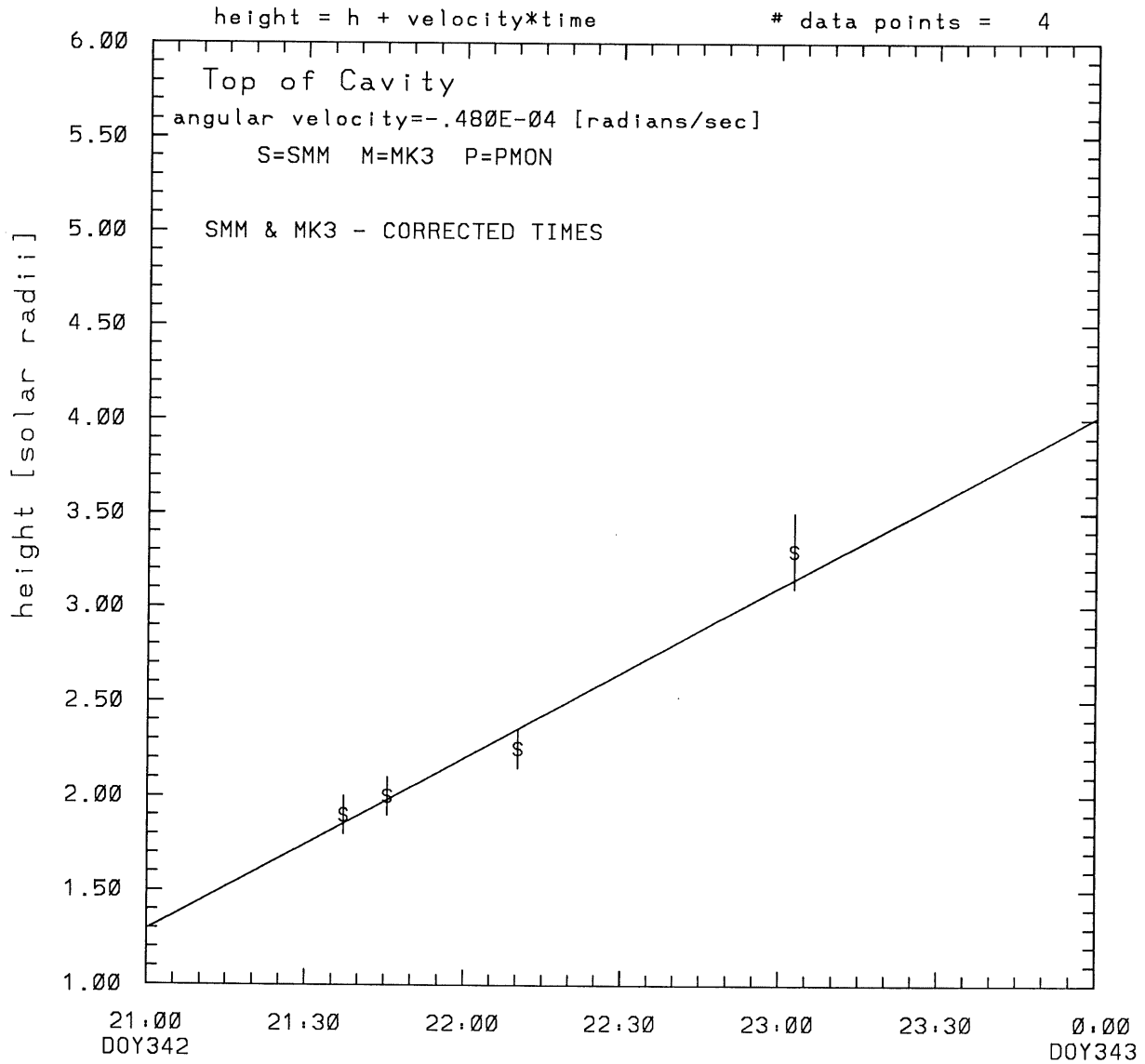
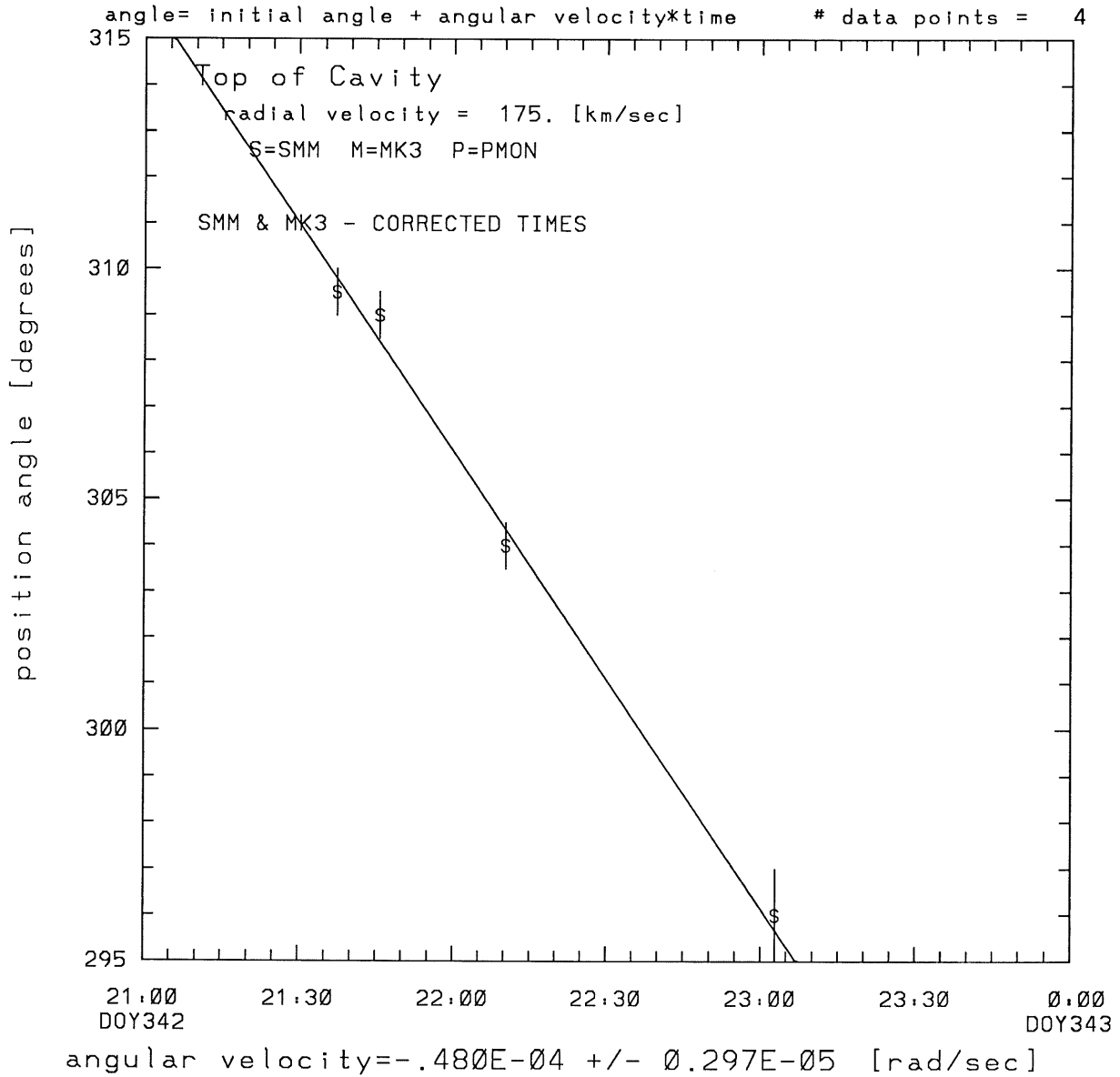


SMM C/P 1988 DOY342 304 +/- 8 degrees

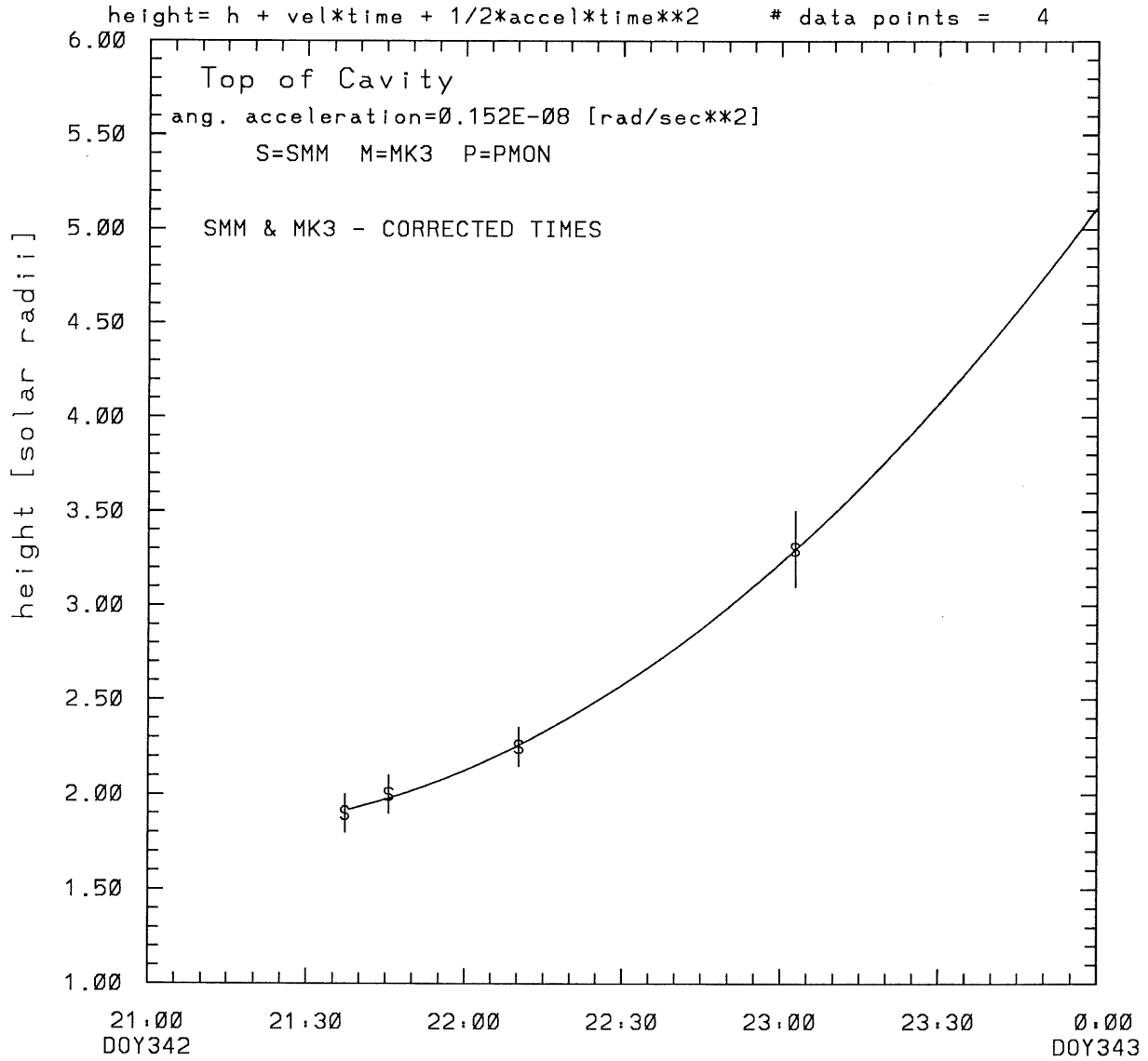


tstart=DOY342 20:41 +/- 1.8 [min.]  
radial velocity= 175. +/- 22. [km/sec]

SMM C/P 1988 DOY342 304 +/- 8 degrees



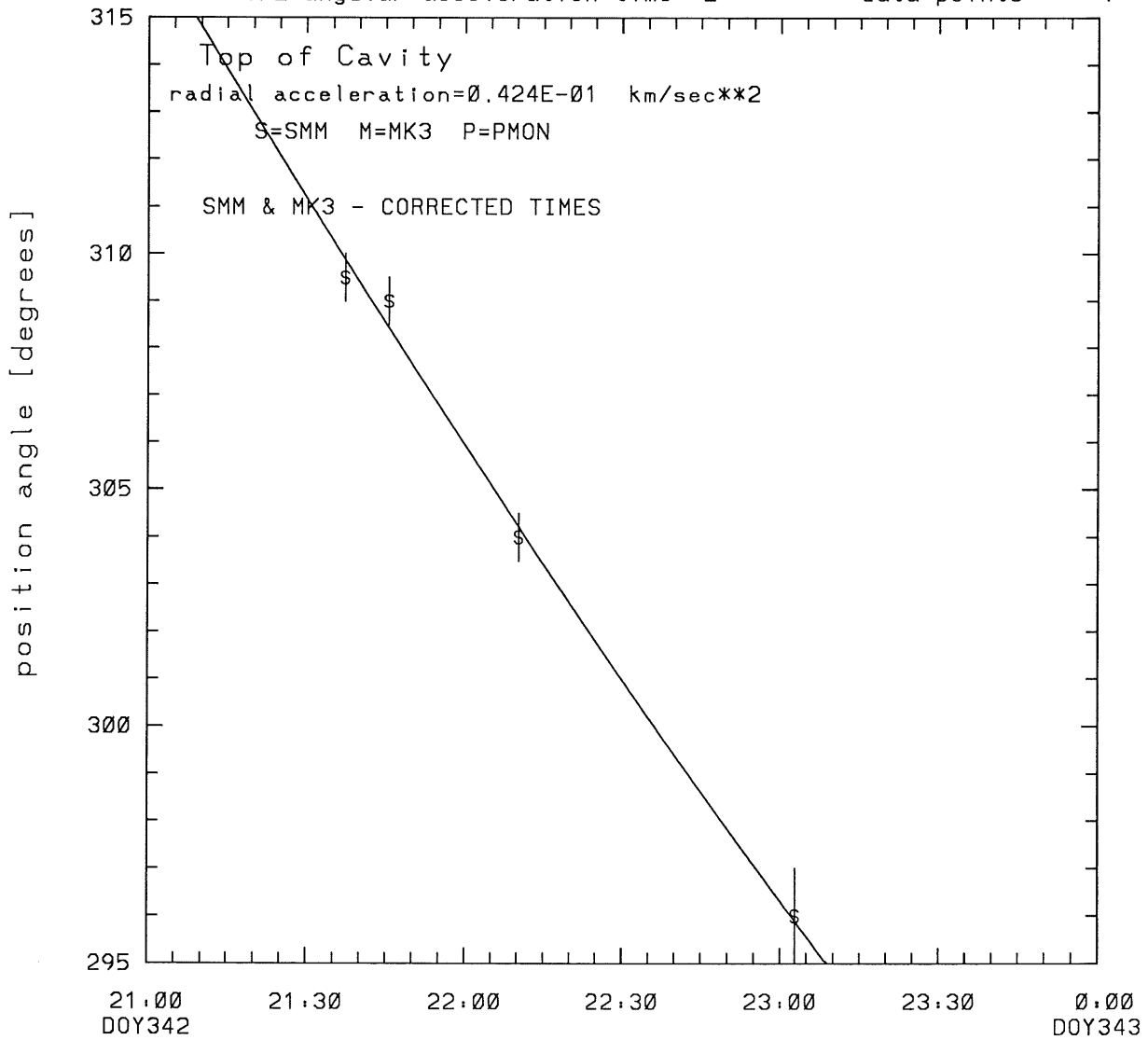
SMM C/P 1988 DOY342 304 +/- 8 degrees



tstart=DOY342 21: 6 from derivative=0  
Event begins at 1.81 Solar Radii  
radial acceleration =  $0.0424 +/- 0.0061$  [km/sec\*\*2]

SMM C/P 1988 DOY342 304 +/- 8 degrees

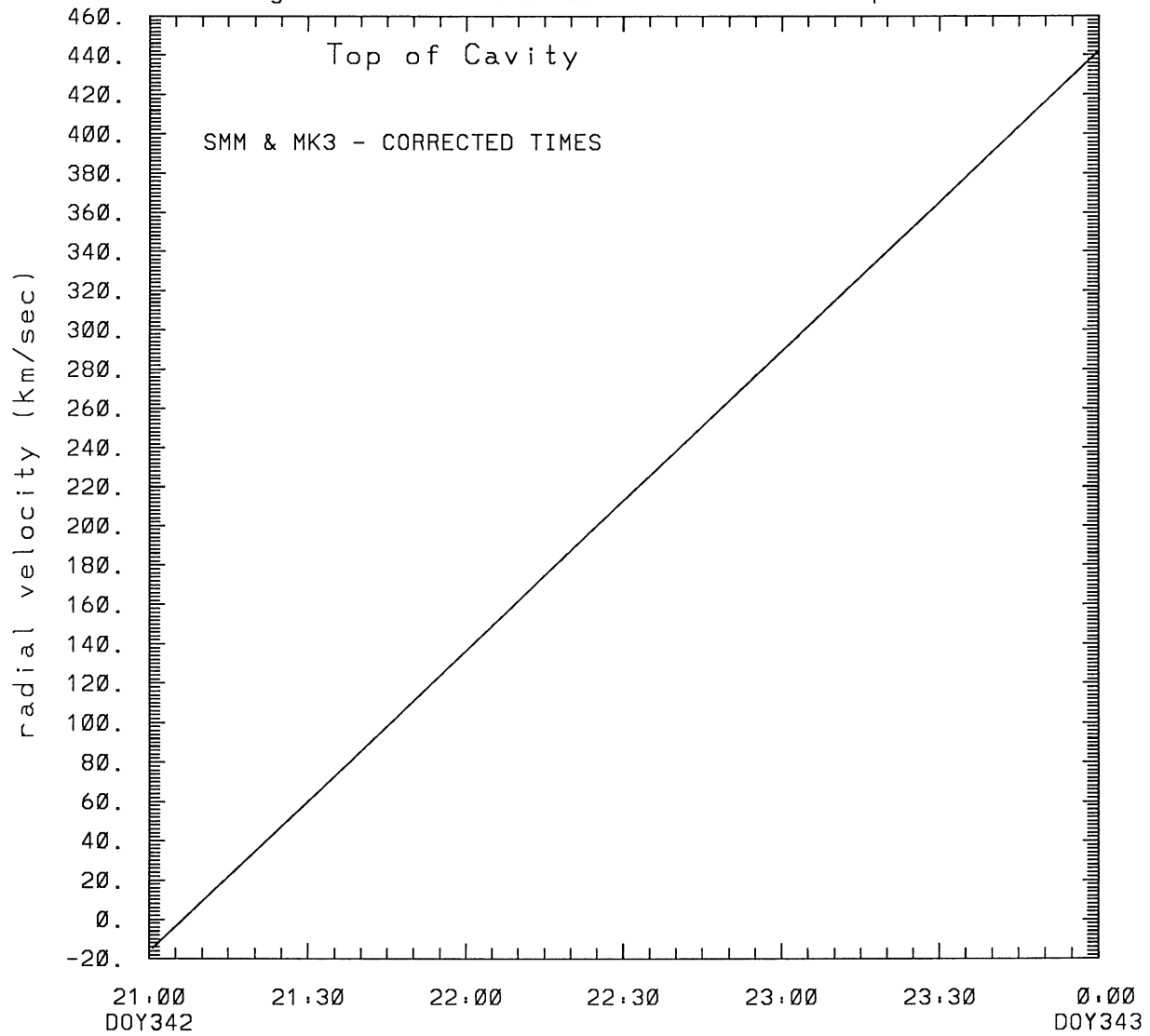
angle = initial angle + angular velocity\*time  
+ 1/2 angular acceleration\*time\*\*2 # data points = 4



Event begins at 1.81 Solar Radii  
angular acceleration=0.152E-08 +/- 0.401E-08 [rad/sec\*\*2]

SMM C/P 1988 DOY342 304 +/- 8 degrees

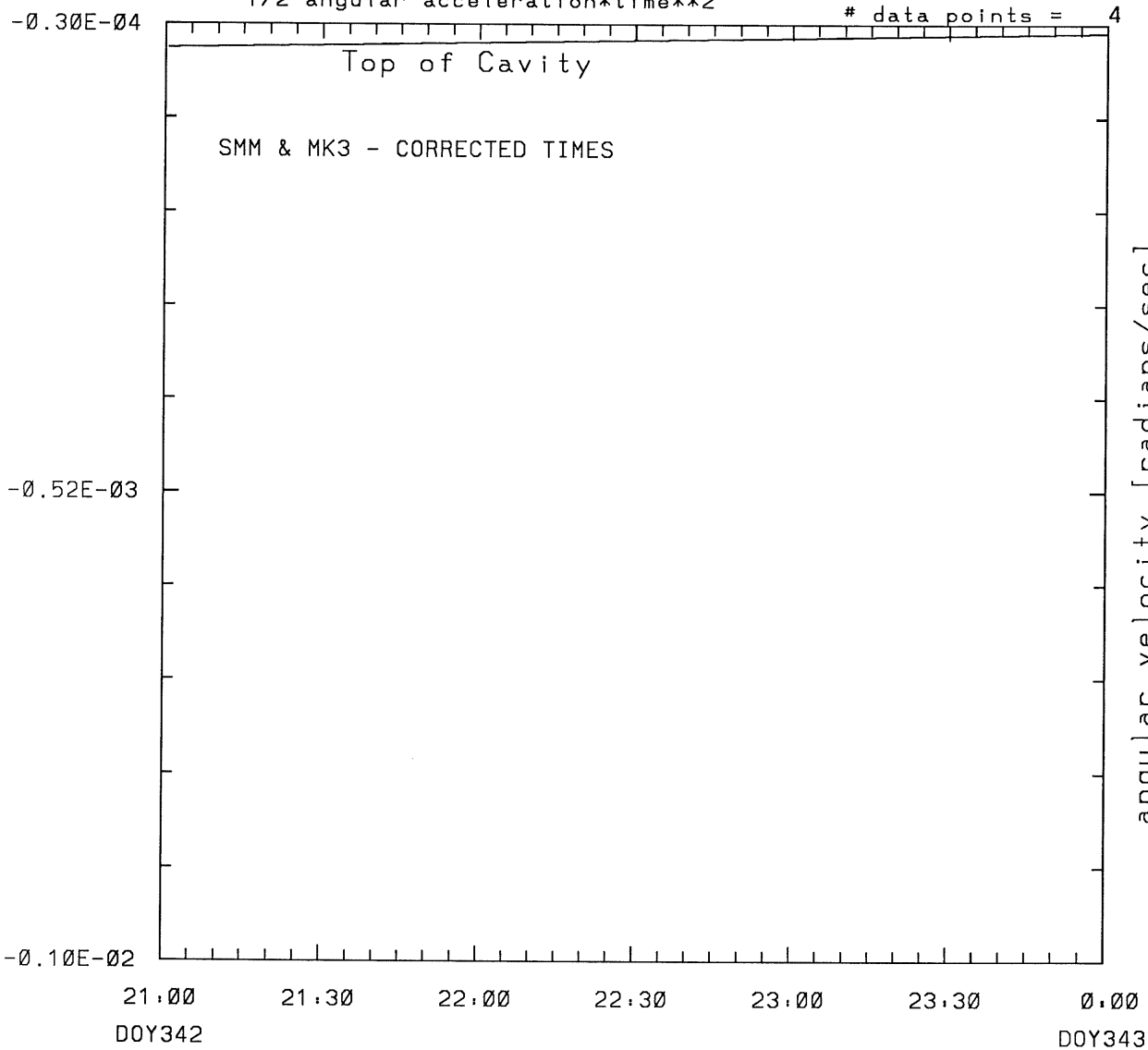
+ 1/2 angular acceleration\*time\*\*2 # data points = 4



tstart=DOY342 21: 6 from derivative=0  
Event begins at 1.81 Solar Radii  
radial acceleration=0.424E-01 km/sec\*\*2

SMM C/P 1988 DOY342 304 +/- 8 degrees

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



angular acceleration =  $0.152E-08 \pm 0.401E-08$  [rad/sec\*\*2]

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

\*\*\*\*\*  
INPUT:  
\*\*\*\*\*

| year | day | time     | radii    | radius | angle     | error in angle | datatype |
|------|-----|----------|----------|--------|-----------|----------------|----------|
| 1988 | 342 | 21:37:15 | 1.90 +/- | 0.10   | 309.5 +/- | 0.5            | SMM      |
| 1988 | 342 | 21:45:32 | 2.00 +/- | 0.10   | 309.0 +/- | 0.5            | SMM      |
| 1988 | 342 | 22:10:17 | 2.25 +/- | 0.10   | 304.0 +/- | 0.5            | SMM      |
| 1988 | 342 | 23: 2:46 | 3.30 +/- | 0.20   | 296.0 +/- | 1.0            | SMM      |

\*\*\*\*\*  
Structure being measured:  
Top of Cavity  
\*\*\*\*\*

\*\*\*\*\*  
OUTPUT:  
\*\*\*\*\*

START TIME:

Event began at t = 0 + -0.193E+02 +/- 0.175E+01 [minutes]  
In more convenient units:  
Event began at DOY 342 20:41 +/- 0.175E+01 [minutes]

Origin defined at DOY342 21: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 175. +/- 22. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.129E+01 +/- 0.116E+00 [solar radii]  
c(2) = 0.151E-01 +/- 0.189E-02 [radii/min]  
c(2) = 0.175E+03 +/- 0.219E+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)= 0.15530E+00 [radii] see Bevington pg. 114  
error in c(2)= 0.20273E-02 [radii/min] see Bevington pg. 114

ANGULAR INFORMATION:

ANGULAR VELOCITY = -0.4802E-04 +/- 0.2973E-05 [radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 316. +/- 1. [degrees]  
a(2) = -0.165E+00 +/- 0.102E-01 [degrees/min]  
a(2) = -0.480E-04 +/- 0.297E-05 [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 21:37 = 175. km/sec

The RADIAL velocity at 21:45 = 175. km/sec

The RADIAL velocity at 22:10 = 175. km/sec

The RADIAL velocity at 23: 2 = 175. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.64  
Standard Deviation in start time measurement = 0.334E+02  
Error in time = 0.12653E+02 using best fit method  
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.784E-02  
Reduced Chi Squared = 0.643E-01  
Chi Squared = 0.129E+00  
The probability for exceeding chi square = 0.992E+00

The correlation coefficient = 0.990E+00  
The probability that no LINEAR correlation exists between the variables = 0.1007  
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 |
|------|-----|----------|---------------|---------------|----------------|----------------|----------|
| 1988 | 342 | 21:37:15 | 1.90 +/- 0.10 | 309.5 +/- 0.5 |                |                | SMM      |
| 1988 | 342 | 21:45:32 | 2.00 +/- 0.10 | 309.0 +/- 0.5 |                |                | SMM      |
| 1988 | 342 | 22:10:17 | 2.25 +/- 0.10 | 304.0 +/- 0.5 |                |                | SMM      |
| 1988 | 342 | 23: 2:46 | 3.30 +/- 0.20 | 296.0 +/- 1.0 |                |                | SMM      |

\*\*\*\*\*  
Structure being measured:  
Top of Cavity  
\*\*\*\*\*

\*\*\*\*\*  
OUTPUT:  
\*\*\*\*\*

START TIME:

tstart=DOY342 21: 6 from derivative = 0  
Event begins at 1.81 Solar Radii  
Origin defined at DOY342 21: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.424E-01 +/- 0.609E-02 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.181E+01 +/- 0.802E-01 [solar radii]  
c(2) = -0.141E-02 +/- 0.242E-02 [radii/min]  
c(2) = -0.163E+02 +/- 0.280E+02 [km/sec]  
c(3) = 0.110E-03 +/- 0.157E-04 [radii/min\*\*2]  
c(3) = 0.424E-01 +/- 0.609E-02 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.11051E+00 [radii] Bevington pg 154 (8-30)  
Exact error in c(1) = 0.47046E-01 [radii] Bevington pg 154 (8-28)  
Approximate error in c(2) = 0.32408E-02 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.12084E-02 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.19734E-04 [radii/min\*\*2] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.68365E-05 [radii/min\*\*2] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

ANGULAR ACCELERATION= 0.1518E-08 +/- 0.4006E-08[radians/sec\*\*2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 317. +/- 2. [degrees]  
a(2) = -0.189E+00 +/- 0.634E-01 [degrees/min]  
a(2) = -0.549E-04 +/- 0.184E-04 [rad/sec]  
a(3) = 0.157E-03 +/- 0.413E-03 [degrees/min\*\*2]  
a(3) = 0.152E-08 +/- 0.401E-08 [rad/sec\*\*2]

The RADIAL velocity at 21:37 = 79. km/sec

The RADIAL velocity at 21:45 = 100. km/sec

The RADIAL velocity at 22:10 = 163. km/sec

The RADIAL velocity at 23: 2 = 296. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.64

Standard Deviation in start time measurement = 0.334E+02

Value of reduced Chi Squared returned from nllst2 = 0.465E-03

Reduced Chi Squared = 0.141E-02

Chi Squared = 0.141E-02

The probability for exceeding chi square = 0.983E+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 = 0.7793E+00

The correlation between the data and the time\*\*2 term = 0.7606E+00

The correlation between the data and the complete equation of motion=0.9978E+00

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