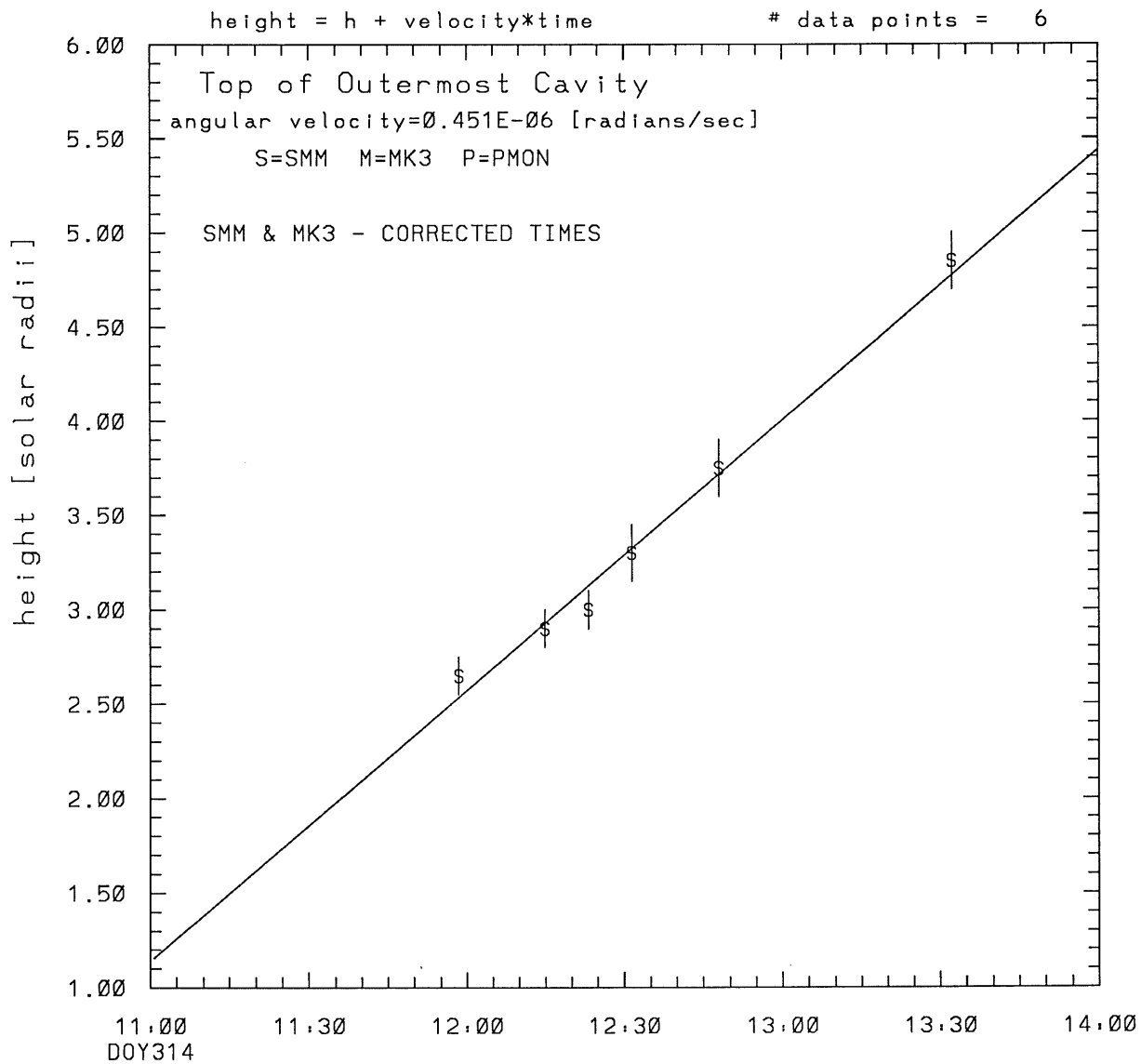


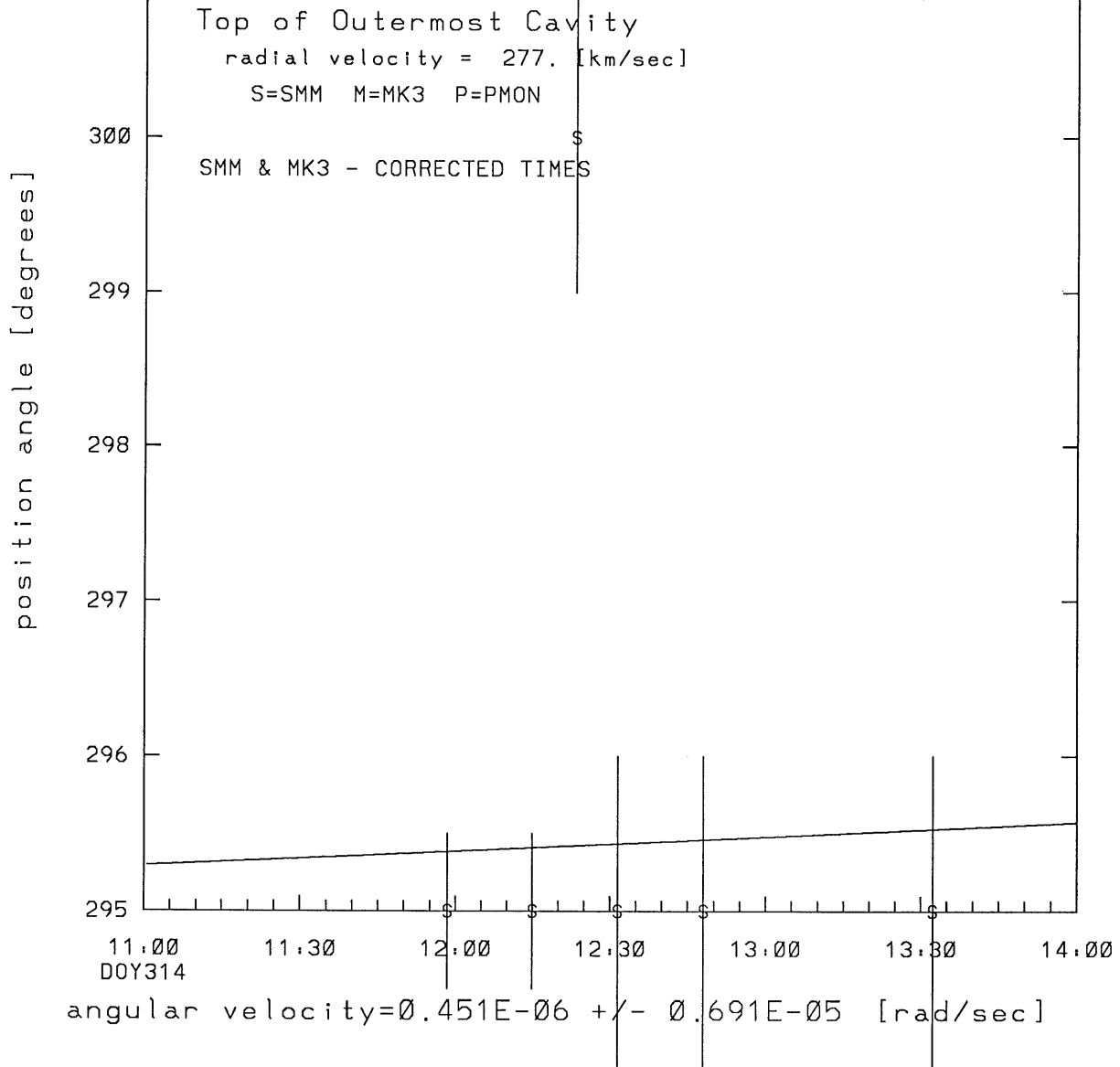
SMM C/P 1988 DOY314 295 +/- 5 degrees



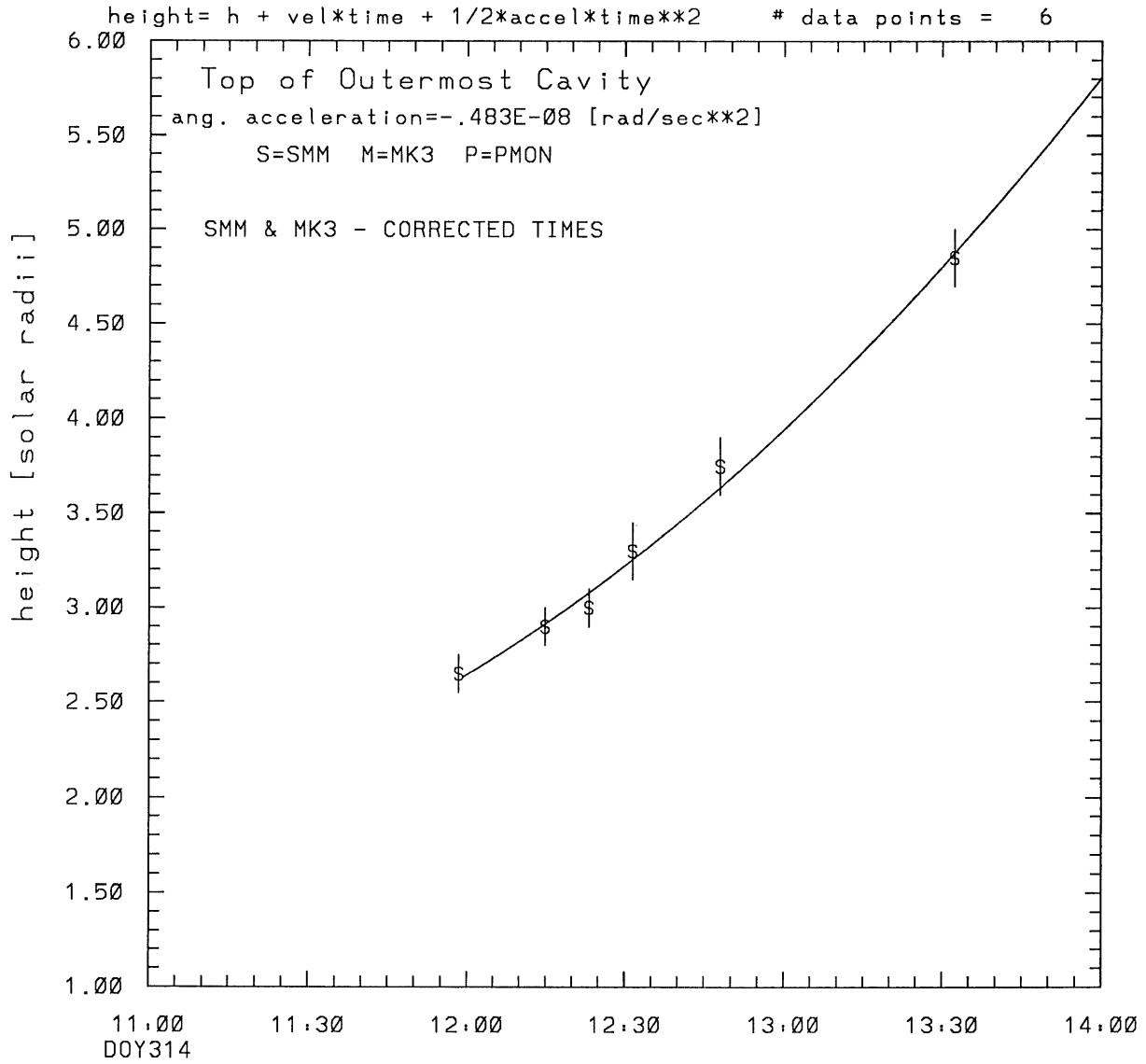
tstart=DOY314 10:56 +/- 0.2 [min.]
radial velocity= 277. +/- 17. [km/sec]

SMM C/P 1988 DOY314 295 +/- 5 degrees

angle = initial angle + angular velocity * time # data points = 6



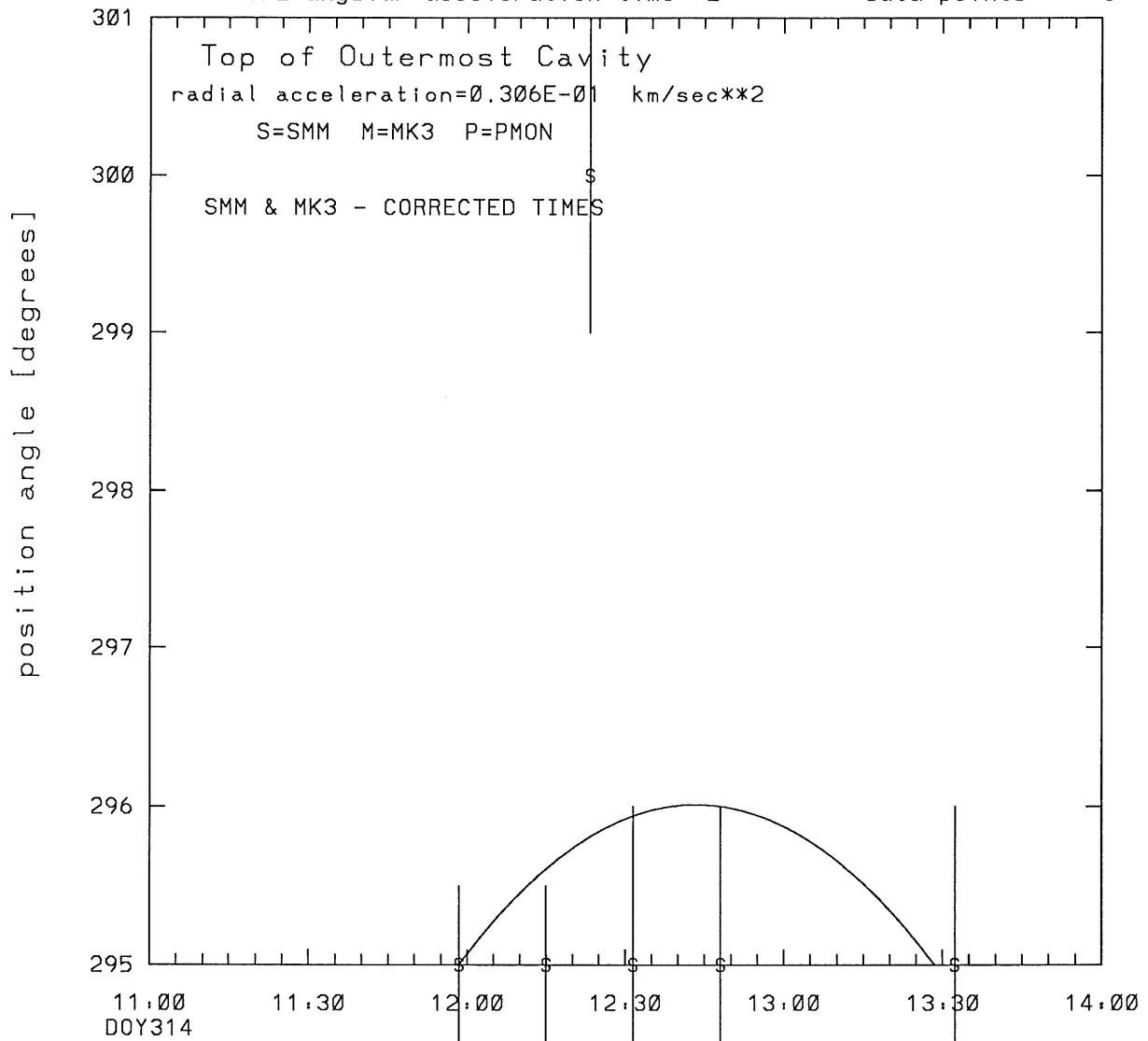
SMM C/P 1988 DOY314 295 +/- 5 degrees



tstart=DOY314 10:14 from derivative=0
Event begins at 1.75 Solar Radii
radial acceleration = $0.0306 +/- 0.0133$ [km/sec**2]

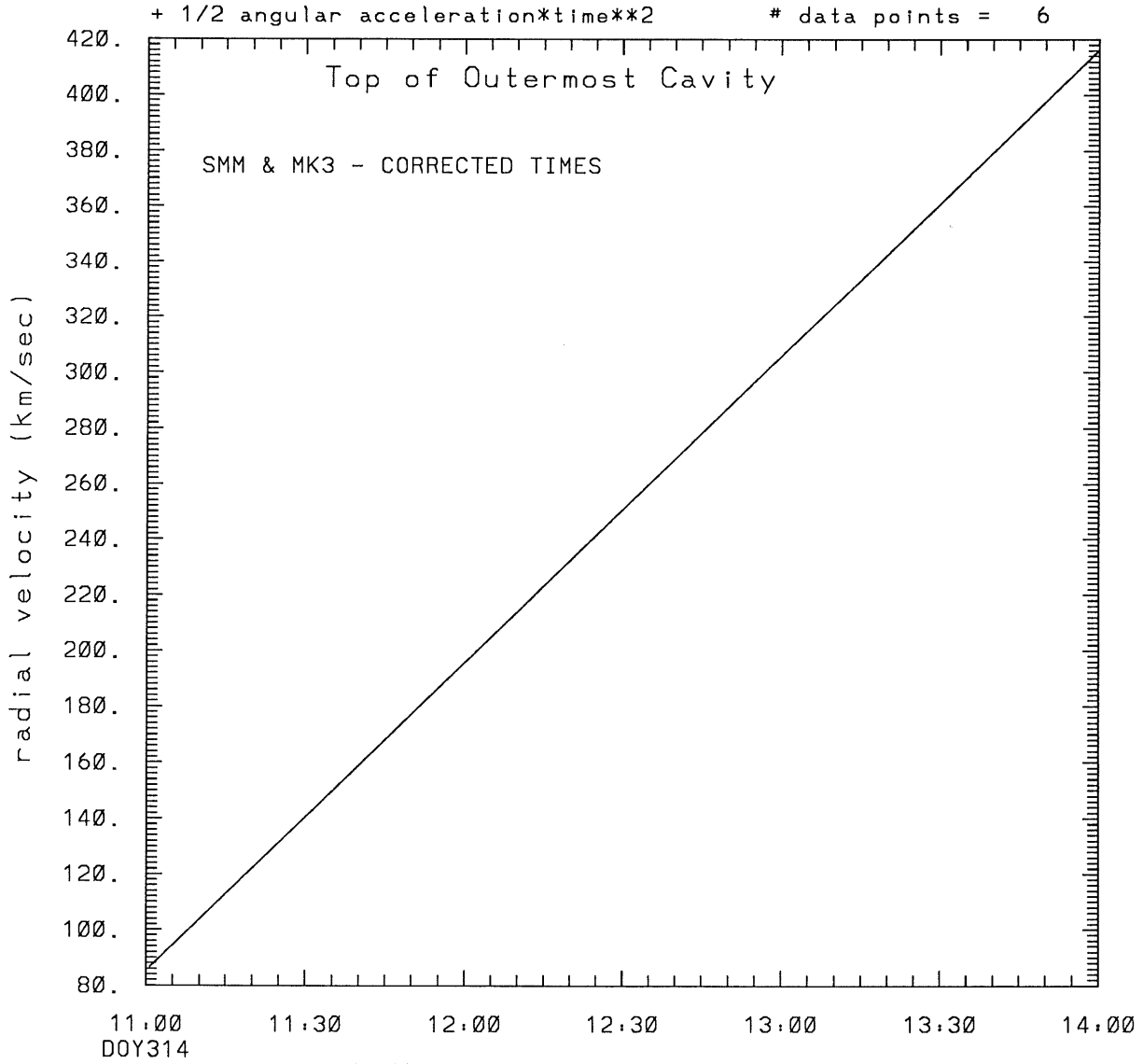
SMM C/P 1988 DOY314 295 +/- 5 degrees

angle = initial angle + angular velocity*time
+ 1/2 angular acceleration*time**2 # data points = 6



Event begins at 1.75 Solar Radii
angular acceleration = $-0.483E-08 \pm 0.796E-08$ [rad/sec**2]

SMM C/P 1988 DOY314 295 +/- 5 degrees

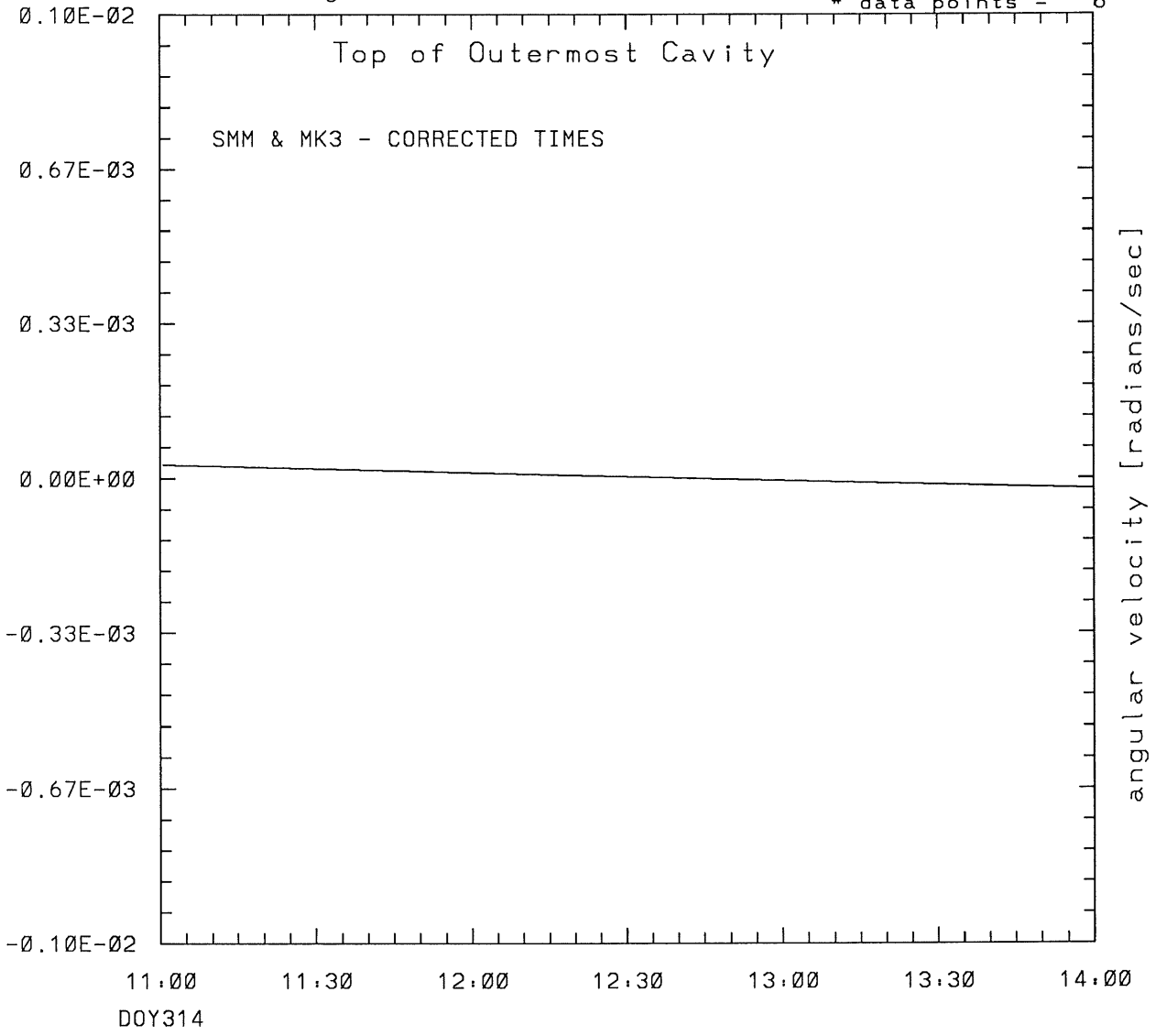


tstart=DOY314 10:14 from derivative=0
Event begins at 1.75 Solar Radii
radial acceleration=0.306E-01 km/sec**2

SMM C/P 1988 DOY314 295 +/- 5 degrees

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

data points = 6



angular acceleration = $-.483E-08$ +/- $0.796E-08$ [rad/sec**2]

This is a 1 order run

INPUT:

year	doy	time	radii	radius	error in angle	error in angle	datatype
1988	314	11:58:27	2.65 +/- 0.10	295.0 +/- 0.5			SMM
1988	314	12:14:57	2.90 +/- 0.10	295.0 +/- 0.5			SMM
1988	314	12:23:14	3.00 +/- 0.10	300.0 +/- 1.0			SMM
1988	314	12:31:30	3.30 +/- 0.15	295.2 +/- 1.0			SMM
1988	314	12:48: 2	3.75 +/- 0.15	295.2 +/- 1.0			SMM
1988	314	13:32:16	4.85 +/- 0.15	295.2 +/- 1.0			SMM

Structure being measured:
Top of Outermost Cavity

OUTPUT:

START TIME:

Event began at t = 0 + -0.585E+01 +/- 0.235E+00 [minutes]
In more convenient units:
Event began at DOY 314 10:56 +/- 0.235E+00 [minutes]

Origin defined at DOY314 11: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 277. +/- 17. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.114E+01 +/- 0.133E+00 [solar radii]
c(2) = 0.239E-01 +/- 0.147E-02 [radii/min]
c(2) = 0.277E+03 +/- 0.171E+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)= 0.13159E+00 [radii] see Bevington pg. 114
error in c(2)= 0.13248E-02 [radii/min] see Bevington pg. 114

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.1238E-05 +/- 0.6833E-05[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 295. +/- 2. [degrees]
a(2) = 0.426E-02 +/- 0.235E-01 [degrees/min]
a(2) = 0.124E-05 +/- 0.683E-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 11:58 = 277. km/sec

The RADIAL velocity at 12:14 = 277. km/sec

The RADIAL velocity at 12:23 = 277. km/sec

The RADIAL velocity at 12:31 = 277. km/sec

The RADIAL velocity at 12:48 = 277. km/sec

The RADIAL velocity at 13:32 = 277. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.80

Standard Deviation in start time measurement = 0.298E+02

Error in time = 0.81124E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.922E-02

Reduced Chi Squared = 0.263E-01

Chi Squared = 0.105E+00

The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.994E+00

The probability that no LINEAR correlation exists between the variables = 0.4661]

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
1988	314	11:58:27	2.65 +/- 0.10	295.0 +/- 0.5			SMM
1988	314	12:14:57	2.90 +/- 0.10	295.0 +/- 0.5			SMM
1988	314	12:23:14	3.00 +/- 0.10	300.0 +/- 1.0			SMM
1988	314	12:31:30	3.30 +/- 0.15	295.2 +/- 1.0			SMM
1988	314	12:48: 2	3.75 +/- 0.15	295.2 +/- 1.0			SMM
1988	314	13:32:16	4.85 +/- 0.15	295.2 +/- 1.0			SMM

Structure being measured:
Top of Outermost Cavity

OUTPUT:

START TIME:

tstart=DOY314 10:14 from derivative = 0
Event begins at 1.75 Solar Radii
Origin defined at DOY314 11: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.306E-01 +/- 0.133E-01 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.192E+01 +/- 0.351E+00 [solar radii]
c(2) = 0.736E-02 +/- 0.723E-02 [radii/min]
c(2) = 0.853E+02 +/- 0.839E+02 [km/sec]
c(3) = 0.792E-04 +/- 0.343E-04 [radii/min**2]
c(3) = 0.306E-01 +/- 0.133E-01 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.43993E+00 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.12214E+00 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.87561E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.24819E-02 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.40364E-04 [radii/min**2] Bevington pg 154 (8-30)
Exact error in c(3) = 0.11164E-04 [radii/min**2] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

ANGULAR ACCELERATION= -0.5005E-08 +/- 0.7831E-08[radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 290. +/- 8. [degrees]
a(2) = 0.109E+00 +/- 0.166E+00 [degrees/min]
a(2) = 0.318E-04 +/- 0.484E-04 [rad/sec]
a(3) = -0.516E-03 +/- 0.808E-03 [degrees/min**2]
a(3) = -0.501E-08 +/- 0.783E-08 [rad/sec**2]

The RADIAL velocity at 11:58 = 193. km/sec

The RADIAL velocity at 12:14 = 223. km/sec

The RADIAL velocity at 12:23 = 238. km/sec

The RADIAL velocity at 12:31 = 253. km/sec

The RADIAL velocity at 12:48 = 284. km/sec

The RADIAL velocity at 13:32 = 365. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.80
Standard Deviation in start time measurement = 0.298E+02
Value of reduced Chi Squared returned from nllst2 = 0.495E-02
Reduced Chi Squared = 0.321E-01
Chi Squared = 0.962E-01
The probability for exceeding chi square = 0.100E+01

For a second order fit 3 correlation coefficients are given:

(Using equation of motion: $r = a + bt + at^2$)

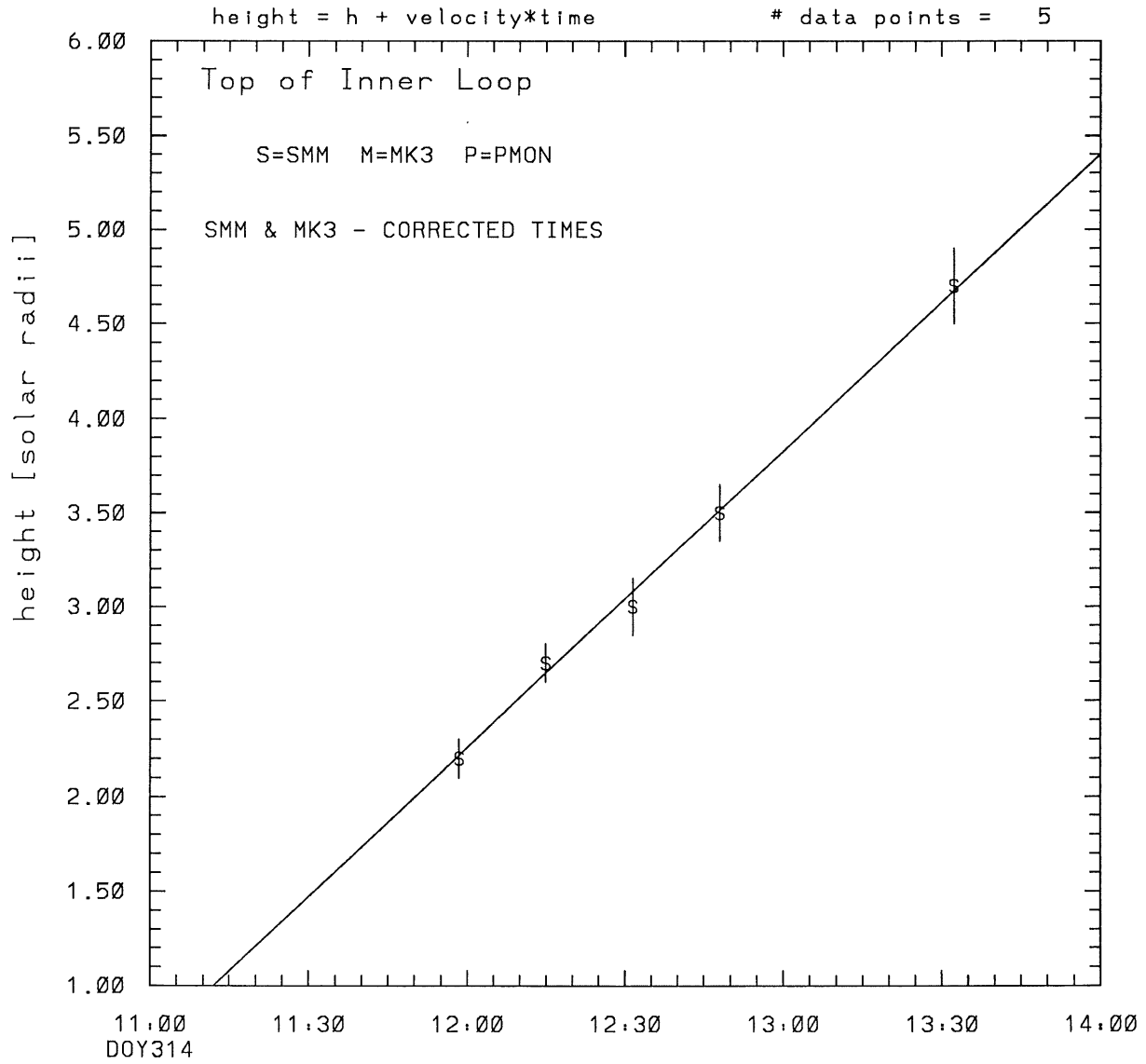
The correlation between the data and the term linear in time = 0.9305E+00

The correlation between the data and the time**2 term = 0.9036E+00

The correlation between the data and the complete equation of motion=0.9869E+00

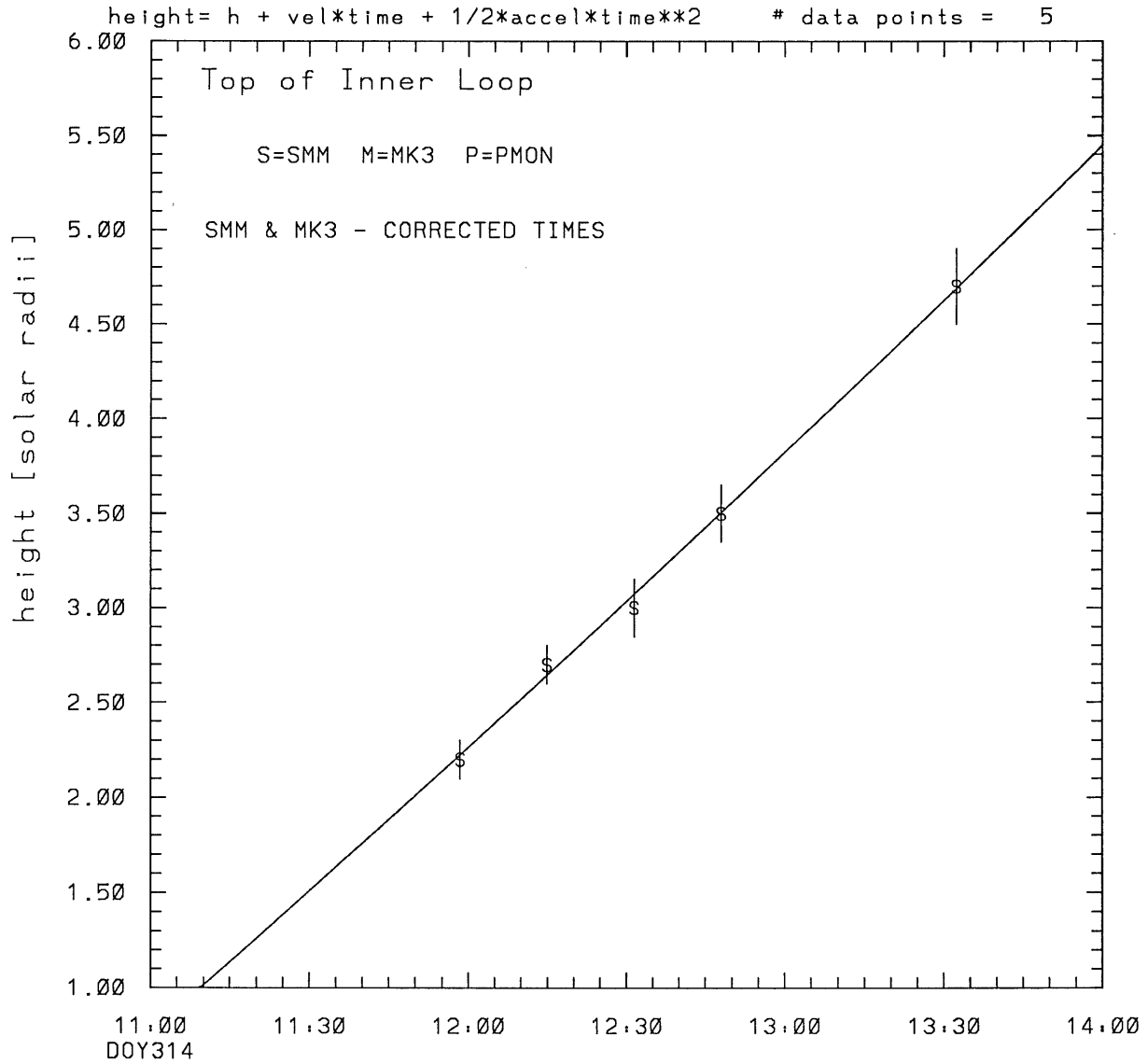
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

SMM C/P 1988 DOY314 295 +/- 0 degrees



tstart=DOY314 11:12 +/- 0.3 [min.]
radial velocity= 304. +/- 10. [km/sec]

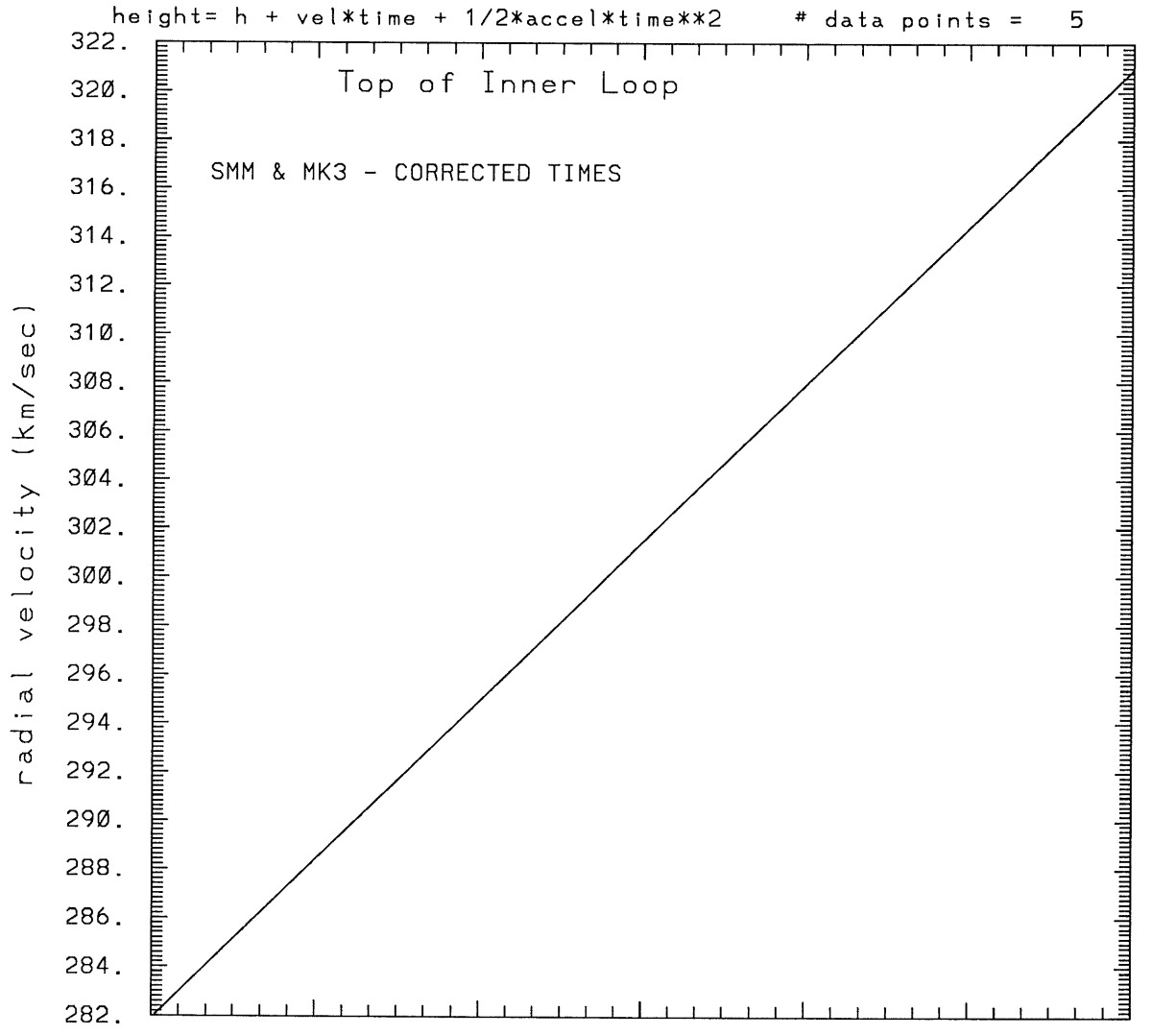
SMM C/P 1988 DOY314 295 +/- 0 degrees



tstart=DOY314 11: 9 +/- 4.5 [min.]

radial acceleration = 0.0036 +/- 0.0117 [km/sec**2]

SMM C/P 1988 DOY314 295 +/- 0 degrees



DOY314

tstart=DOY314 11: 9 +/- 4.5 [min.]

radial acceleration=0.361E-02 km/sec**2

This is a 1 order run

INPUT:

year	day	time	radii	error in radius	angle	error in angle	datatype
1988	314	11:58:27	2.20	+/- 0.10	295.0	+/- 0.5	SMM
1988	314	12:14:57	2.70	+/- 0.10	295.0	+/- 0.5	SMM
1988	314	12:31:30	3.00	+/- 0.15	295.0	+/- 1.0	SMM
1988	314	12:48: 2	3.50	+/- 0.15	295.0	+/- 1.0	SMM
1988	314	13:32:16	4.70	+/- 0.20	295.0	+/- 1.0	SMM

Structure being measured:

Top of Inner Loop

OUTPUT:

START TIME:

Event began at $t = 0 + 0.120E+02 \pm 0.324E+00$ [minutes]

In more convenient units:

Event began at DOY 314 11:12 $\pm 0.324E+00$ [minutes]

Origin defined at DOY314 11: 0

RADIAL INFORMATION:

RADIAL VELOCITY = $304. \pm 10.$ km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.686E+00 \pm 0.732E-01$ [solar radii]
 $c(2) = 0.262E-01 \pm 0.842E-03$ [radii/min]
 $c(2) = 0.304E+03 \pm 0.977E+01$ [km/sec]
 $c(3) = 0.000E+00 \pm 0.000E+00$ [radii/min**2]
 $c(3) = 0.000E+00 \pm 0.000E+00$ [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

error in $c(1) = 0.84283E-01$ [radii] see Bevington pg. 114

error in $c(2) = 0.82439E-03$ [radii/min] see Bevington pg. 114

ANGULAR INFORMATION:

ANGULAR VELOCITY = $0.0000E+00 \pm 0.0000E+00$ [radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 295. +/- 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 11:58 = 0. km/sec

The TOTAL velocity at 11:58 = 304. km/sec

The TANGENTIAL velocity at 12:14 = 0. km/sec

The TOTAL velocity at 12:14 = 304. km/sec

The TANGENTIAL velocity at 12:31 = 0. km/sec

The TOTAL velocity at 12:31 = 304. km/sec

The TANGENTIAL velocity at 12:48 = 0. km/sec

The TOTAL velocity at 12:48 = 304. km/sec

The TANGENTIAL velocity at 13:32 = 0. km/sec

The TOTAL velocity at 13:32 = 304. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.95

Standard Deviation in start time measurement = 0.322E+02

Error in time = 0.39254E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.246E-02

Reduced Chi Squared = 0.101E-01

Chi Squared = 0.302E-01

The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.999E+00

The probability that no LINEAR correlation exists between the variables = 0.6170E-04

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

This is a 2 order run

INPUT:

year	day	time	error in radii	error in radius	error in angle	error in angle	datatype
1988	314	11:58:27	2.20 +/- 0.10	295.0 +/- 0.5	295.0 +/- 0.5	295.0 +/- 0.5	SMM
1988	314	12:14:57	2.70 +/- 0.10	295.0 +/- 0.5	295.0 +/- 0.5	295.0 +/- 0.5	SMM
1988	314	12:31:30	3.00 +/- 0.15	295.0 +/- 1.0	295.0 +/- 1.0	295.0 +/- 1.0	SMM
1988	314	12:48: 2	3.50 +/- 0.15	295.0 +/- 1.0	295.0 +/- 1.0	295.0 +/- 1.0	SMM
1988	314	13:32:16	4.70 +/- 0.20	295.0 +/- 1.0	295.0 +/- 1.0	295.0 +/- 1.0	SMM

Structure being measured:
Top of Inner Loop

OUTPUT:

START TIME:

Event began at $t = 0 + 0.939E+01 \pm 0.450E+01$ [minutes]
In more convenient units:
Event began at DOY 314 11: 9 $\pm 0.450E+01$ [minutes]

Origin defined at DOY314 11: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = $0.361E-02 \pm 0.117E-01$ km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.771E+00 \pm 0.286E+00$ [solar radii]
 $c(2) = 0.243E-01 \pm 0.614E-02$ [radii/min]
 $c(2) = 0.282E+03 \pm 0.712E+02$ [km/sec]
 $c(3) = 0.935E-05 \pm 0.302E-04$ [radii/min**2]
 $c(3) = 0.361E-02 \pm 0.117E-01$ [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in $c(1) = 0.34245E+00$ [radii] Bevington pg 154 (8-30)
Exact error in $c(1) = 0.60516E-01$ [radii] Bevington pg 154 (8-28)
Approximate error in $c(2) = 0.68978E-02$ [radii/min] Bevington pg 154 (8-30)
Exact error in $c(2) = 0.10350E-02$ [radii/min] Bevington pg 154 (8-28)
Approximate error in $c(3) = 0.31987E-04$ [radii/min**] Bevington pg 154 (8-30)
Exact error in $c(3) = 0.44032E-05$ [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) = 295. +/- 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 11:58 = 0. km/sec

The TOTAL velocity at 11:58 = 295. km/sec

The TANGENTIAL velocity at 12:14 = 0. km/sec

The TOTAL velocity at 12:14 = 298. km/sec

The TANGENTIAL velocity at 12:31 = 0. km/sec

The TOTAL velocity at 12:31 = 302. km/sec

The TANGENTIAL velocity at 12:48 = 0. km/sec

The TOTAL velocity at 12:48 = 305. km/sec

The TANGENTIAL velocity at 13:32 = 0. km/sec

The TOTAL velocity at 13:32 = 315. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.95

Standard Deviation in start time measurement = 0.322E+02

Value of reduced Chi Squared returned from nllst2 = 0.318E-02

Reduced Chi Squared = 0.117E-01

Chi Squared = 0.234E-01

The probability for exceeding chi square = 0.997E+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 = 0.9277E+00

The correlation between the data and the time**2 term = 0.8674E+00

The correlation between the data and the complete equation of motion = 0.1001E+01

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