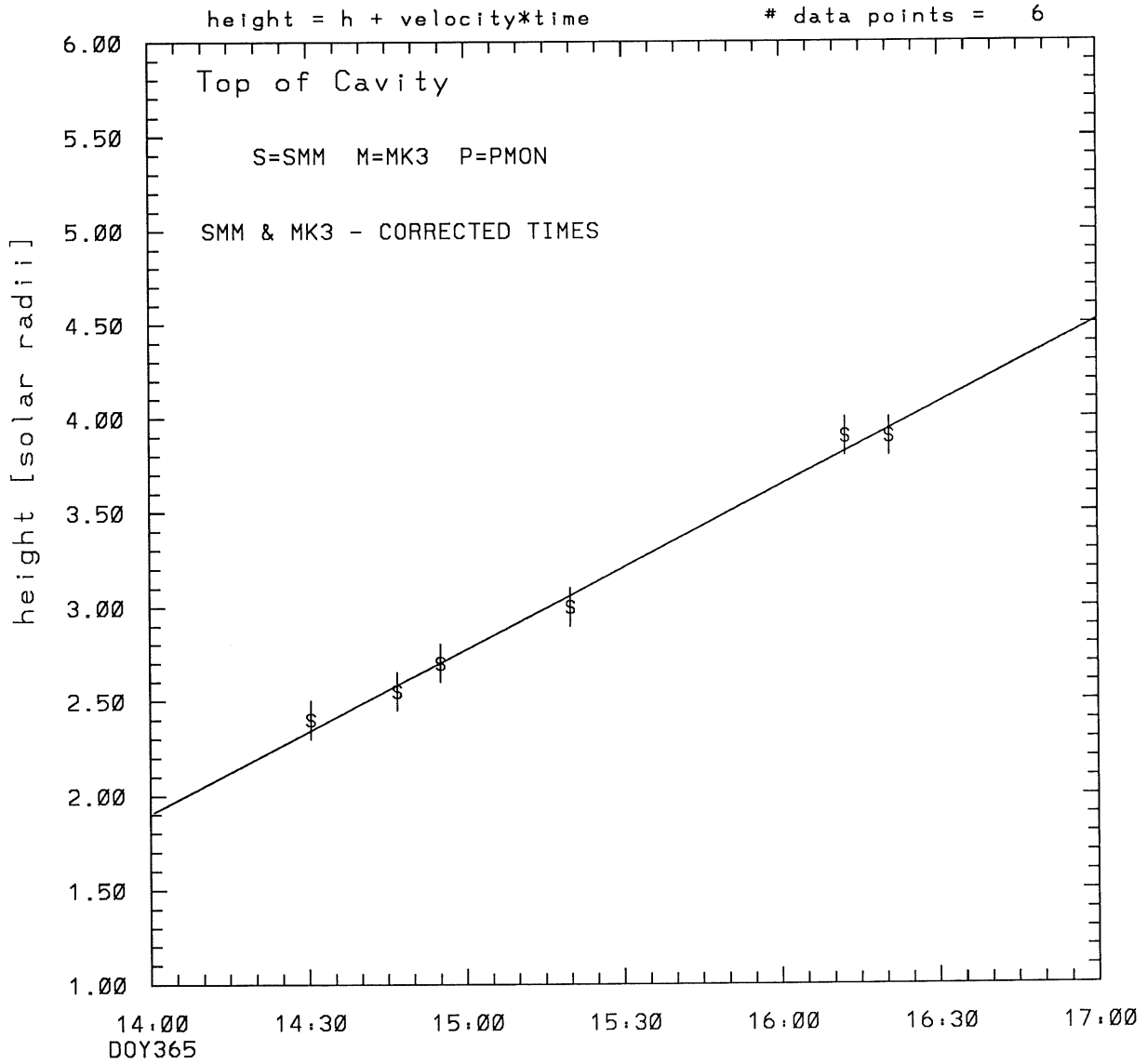
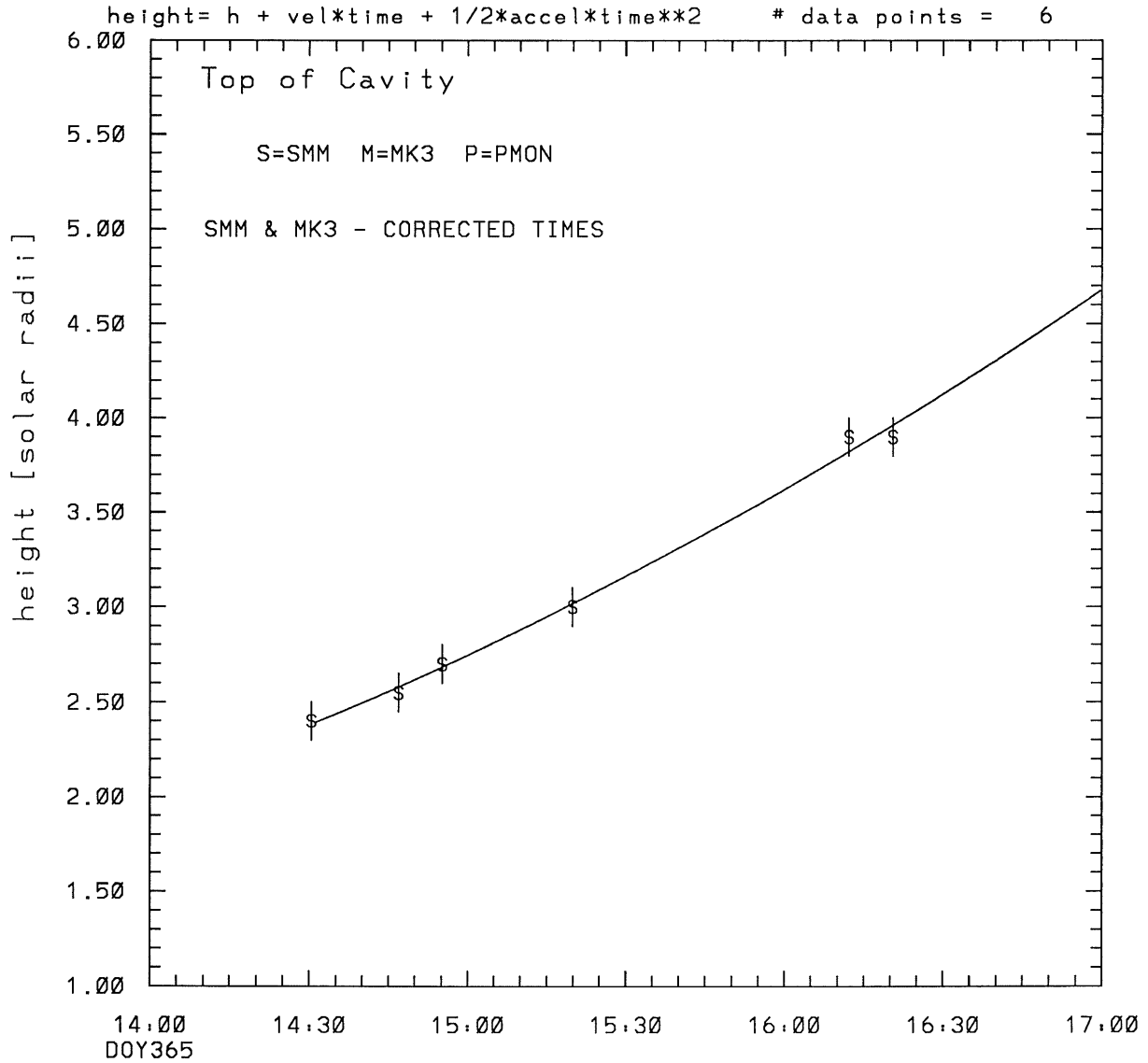


SMM C/P 1988 DOY365 311 +/- 0 degrees



tstart=DOY365 12:58 +/- 1.0 [min.]
radial velocity= 168. +/- 6. [km/sec]

SMM C/P 1988 DOY365 311 +/- 0 degrees

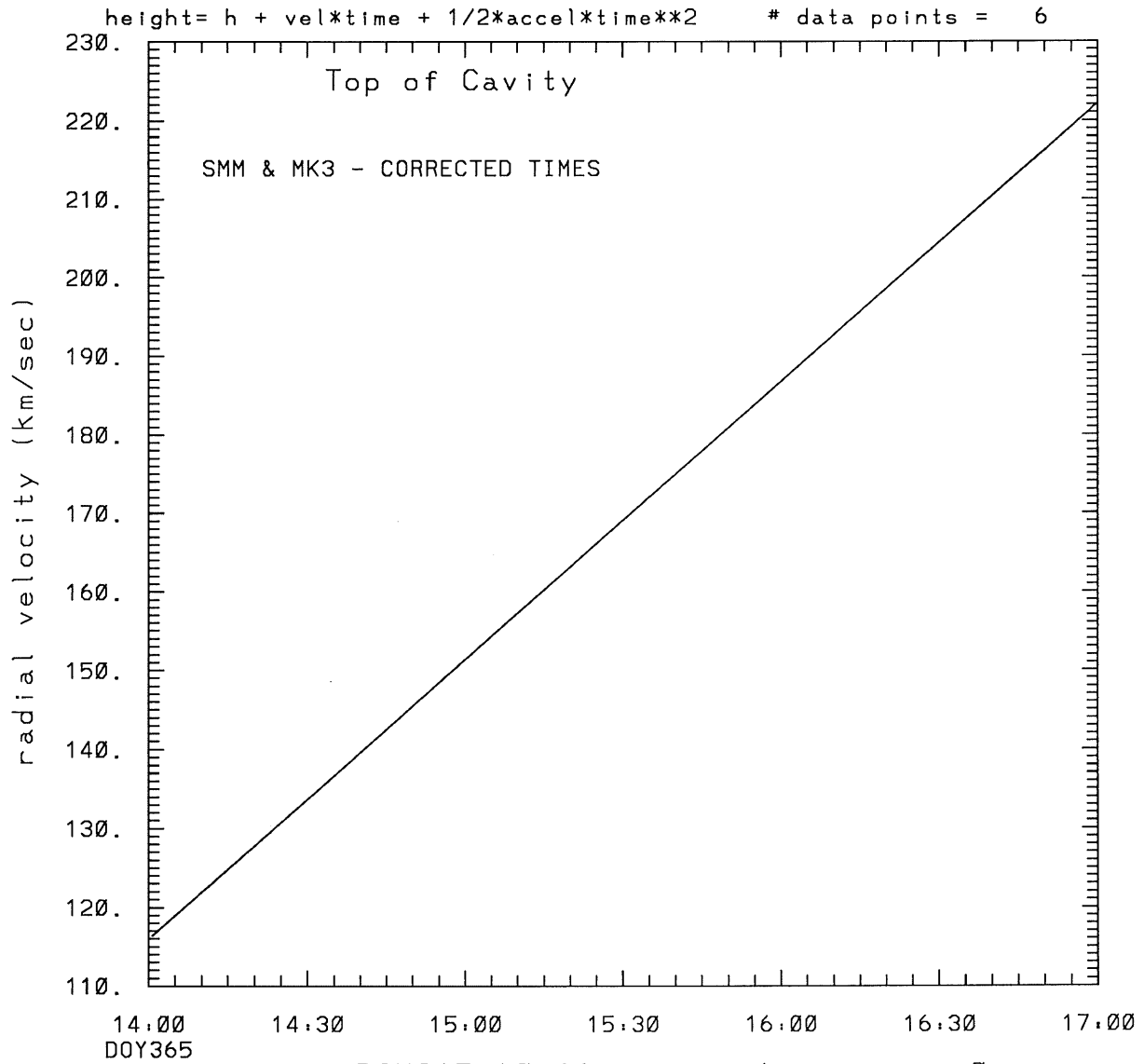


tstart=DOY365 10:44 from derivative=0

Event begins at 1.07 Solar Radii

radial acceleration = 0.0098 ± 0.0080 [km/sec**2]

SMM C/P 1988 DOY365 311 +/- 0 degrees



tstart=DOY365 10:44 from derivative=0
Event begins at 1.07 Solar Radii
radial acceleration=0.983E-02 km/sec**2

This is a 1 order run

INPUT:

year	doy	time	radii	radius	error in	angle	error in	angle	datatype
1988	365	14:30:23	2.40	+/- 0.10	311.0	+/- 0.5	SMM		
1988	365	14:46:54	2.55	+/- 0.10	311.0	+/- 0.5	SMM		
1988	365	14:55:11	2.70	+/- 0.10	311.0	+/- 0.5	SMM		
1988	365	15:19:56	3.00	+/- 0.10	311.0	+/- 1.0	SMM		
1988	365	16:12:16	3.90	+/- 0.10	311.0	+/- 1.0	SMM		
1988	365	16:20:33	3.90	+/- 0.10	311.0	+/- 1.0	SMM		

Structure being measured:
Top of Cavity

OUTPUT:

START TIME:

Event began at $t = 0 + -0.622E+02 +/- 0.971E+00$ [minutes]
In more convenient units:
Event began at DOY 365 12:58 +/- 0.971E+00 [minutes]

Origin defined at DOY365 14: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 168. +/- 6. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

- c(1) = 0.190E+01 +/- 0.503E-01 [solar radii]
- c(2) = 0.145E-01 +/- 0.552E-03 [radii/min]
- c(2) = 0.168E+03 +/- 0.640E+01 [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)= 0.56187E-01 [radii] see Bevington pg. 114
- error in c(2)= 0.61669E-03 [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) = 311. +/- 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 14:30 = 0. km/sec

The TOTAL velocity at 14:30 = 168. km/sec

The TANGENTIAL velocity at 14:46 = 0. km/sec

The TOTAL velocity at 14:46 = 168. km/sec

The TANGENTIAL velocity at 14:55 = 0. km/sec

The TOTAL velocity at 14:55 = 168. km/sec

The TANGENTIAL velocity at 15:19 = 0. km/sec

The TOTAL velocity at 15:19 = 168. km/sec

The TANGENTIAL velocity at 16:12 = 0. km/sec

The TOTAL velocity at 16:12 = 168. km/sec

The TANGENTIAL velocity at 16:20 = 0. km/sec

The TOTAL velocity at 16:20 = 168. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.67

Standard Deviation in start time measurement = 0.420E+02

Error in time = 0.87420E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.321E-02

Reduced Chi Squared = 0.155E-01

Chi Squared = 0.620E-01

The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.996E+00

The probability that no LINEAR correlation exists between the variables = 0.1939E-04

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
1988	365	14:30:23	2.40	+/- 0.10	311.0	+/- 0.5	SMM
1988	365	14:46:54	2.55	+/- 0.10	311.0	+/- 0.5	SMM
1988	365	14:55:11	2.70	+/- 0.10	311.0	+/- 0.5	SMM
1988	365	15:19:56	3.00	+/- 0.10	311.0	+/- 1.0	SMM
1988	365	16:12:16	3.90	+/- 0.10	311.0	+/- 1.0	SMM
1988	365	16:20:33	3.90	+/- 0.10	311.0	+/- 1.0	SMM

Structure being measured:
Top of Cavity

OUTPUT:

START TIME:

tstart=DOY365 10:44 from derivative = 0
Event begins at 1.07 Solar Radii
Origin defined at DOY365 14: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.983E-02 +/- 0.802E-02 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.206E+01 +/- 0.134E+00 [solar radii]
c(2) = 0.100E-01 +/- 0.371E-02 [radii/min]
c(2) = 0.116E+03 +/- 0.431E+02 [km/sec]
c(3) = 0.254E-04 +/- 0.207E-04 [radii/min**2]
c(3) = 0.983E-02 +/- 0.802E-02 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.15469E+00 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.27089E-01 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.42886E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.80744E-03 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.23956E-04 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.54906E-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) = 311. +/- 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 14:30 = 0. km/sec

The TOTAL velocity at 14:30 = 134. km/sec

The TANGENTIAL velocity at 14:46 = 0. km/sec

The TOTAL velocity at 14:46 = 144. km/sec

The TANGENTIAL velocity at 14:55 = 0. km/sec

The TOTAL velocity at 14:55 = 149. km/sec

The TANGENTIAL velocity at 15:19 = 0. km/sec

The TOTAL velocity at 15:19 = 163. km/sec

The TANGENTIAL velocity at 16:12 = 0. km/sec

The TOTAL velocity at 16:12 = 194. km/sec

The TANGENTIAL velocity at 16:20 = 0. km/sec

The TOTAL velocity at 16:20 = 199. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.67

Standard Deviation in start time measurement = 0.420E+02

Value of reduced Chi Squared returned from nllst2 = 0.292E-02

Reduced Chi Squared = 0.192E-01

Chi Squared = 0.577E-01

The probability for exceeding chi square = 0.100E+01

For a second order fit 3 correlation coefficients are given:

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

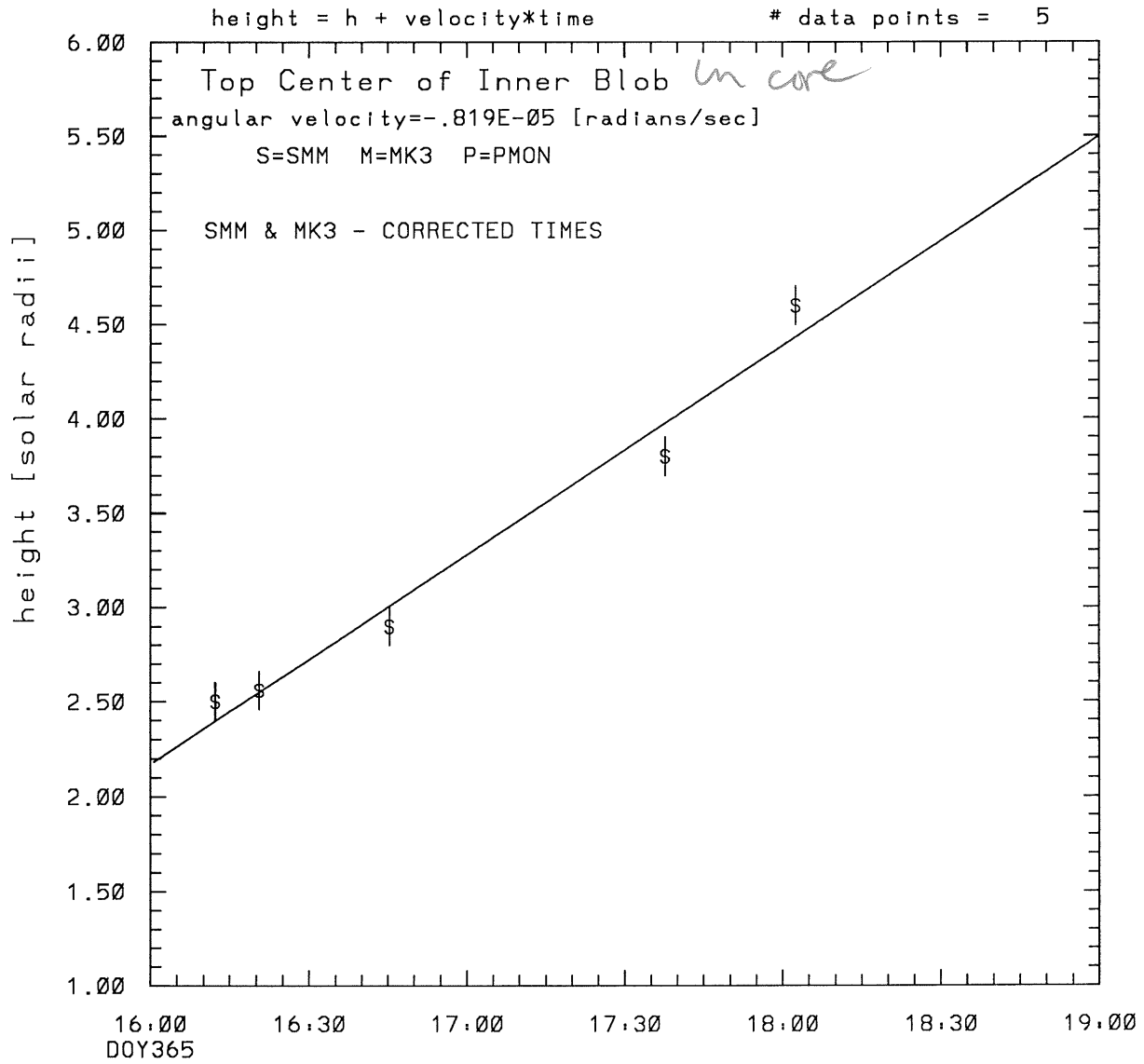
The correlation between the data and the term linear in time = 0.9964E+00

The correlation between the data and the time**2 term = 0.9926E+00

0The correlation between the data and the complete equation of motion = 0.9948E+00

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

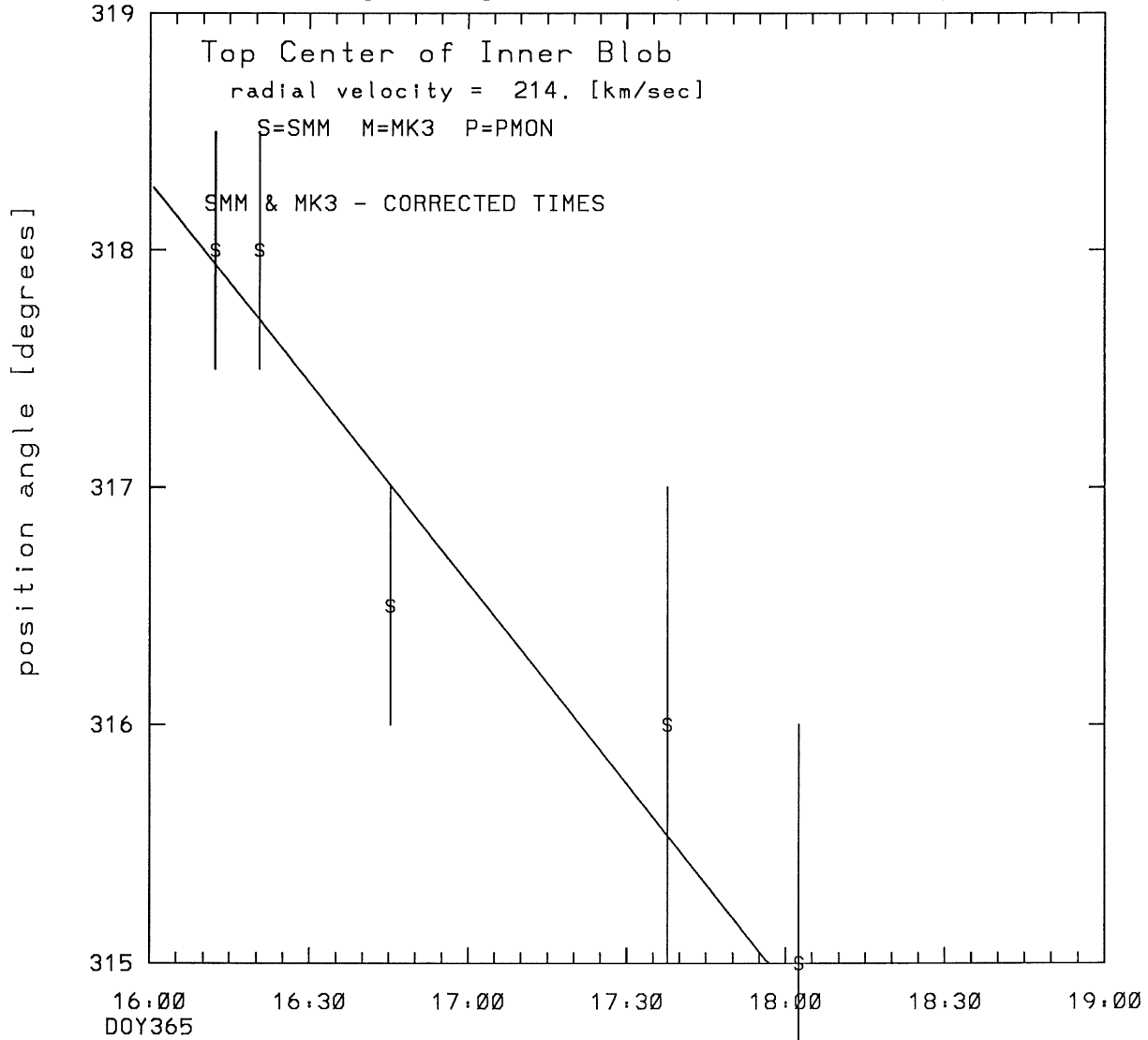
SMM C/P 1988 DOY365 316 +/- 2 degrees



tstart=DOY365 14:57 +/- 2.6 [min.]
radial velocity= 214. +/- 17. [km/sec]

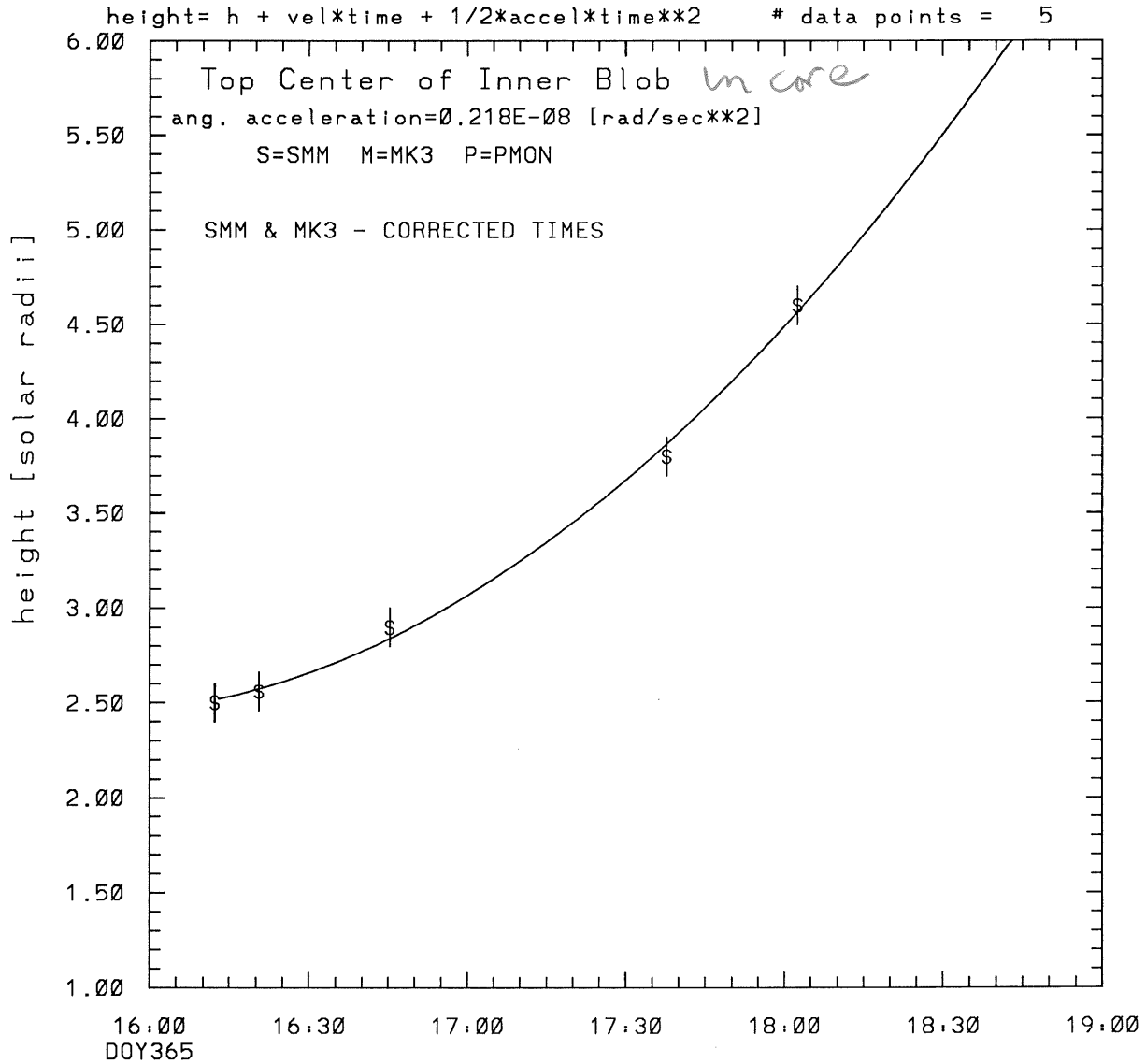
SMM C/P 1988 DOY365 316 +/- 2 degrees

angle = initial angle + angular velocity * time # data points = 5



angular velocity = $-.819E-05 \pm 0.153E-05$ [rad/sec]

SMM C/P 1988 DOY365 316 +/- 2 degrees

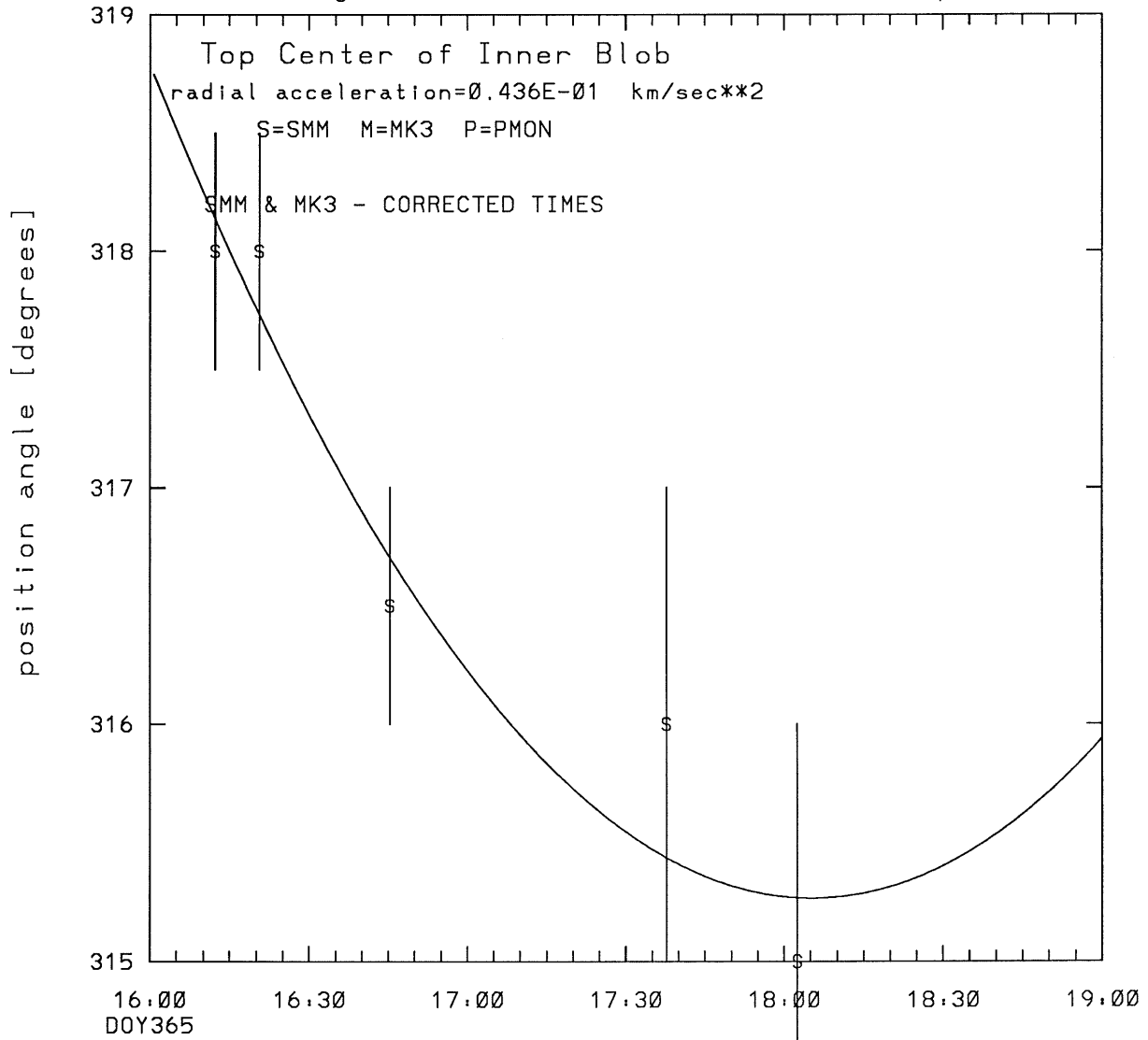


tstart = DOY365 15.45 from derivative = 0
Event begins at 2.43 Solar Radii
radial acceleration = 0.0436 ± 0.0091 [km/sec**2]

SMM C/P 1988 DOY365 316 +/- 2 degrees

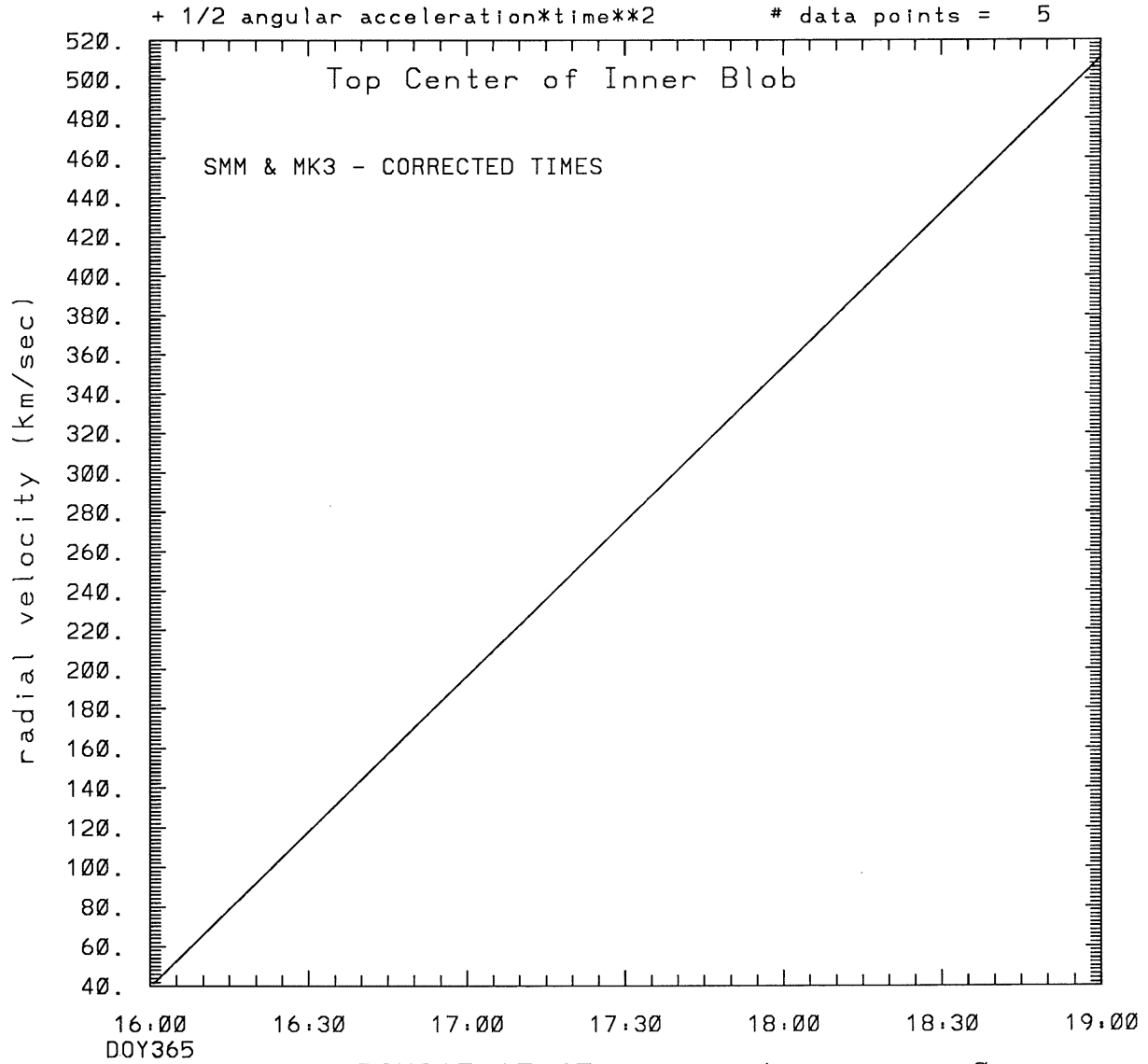
angle = initial angle + angular velocity*time
+ 1/2 angular acceleration*time**2

data points = 5



Event begins at 2.43 Solar Radii
angular acceleration=0.218E-08 +/- 0.141E-08 [rad/sec**2]

SMM C/P 1988 DOY365 316 +/- 2 degrees

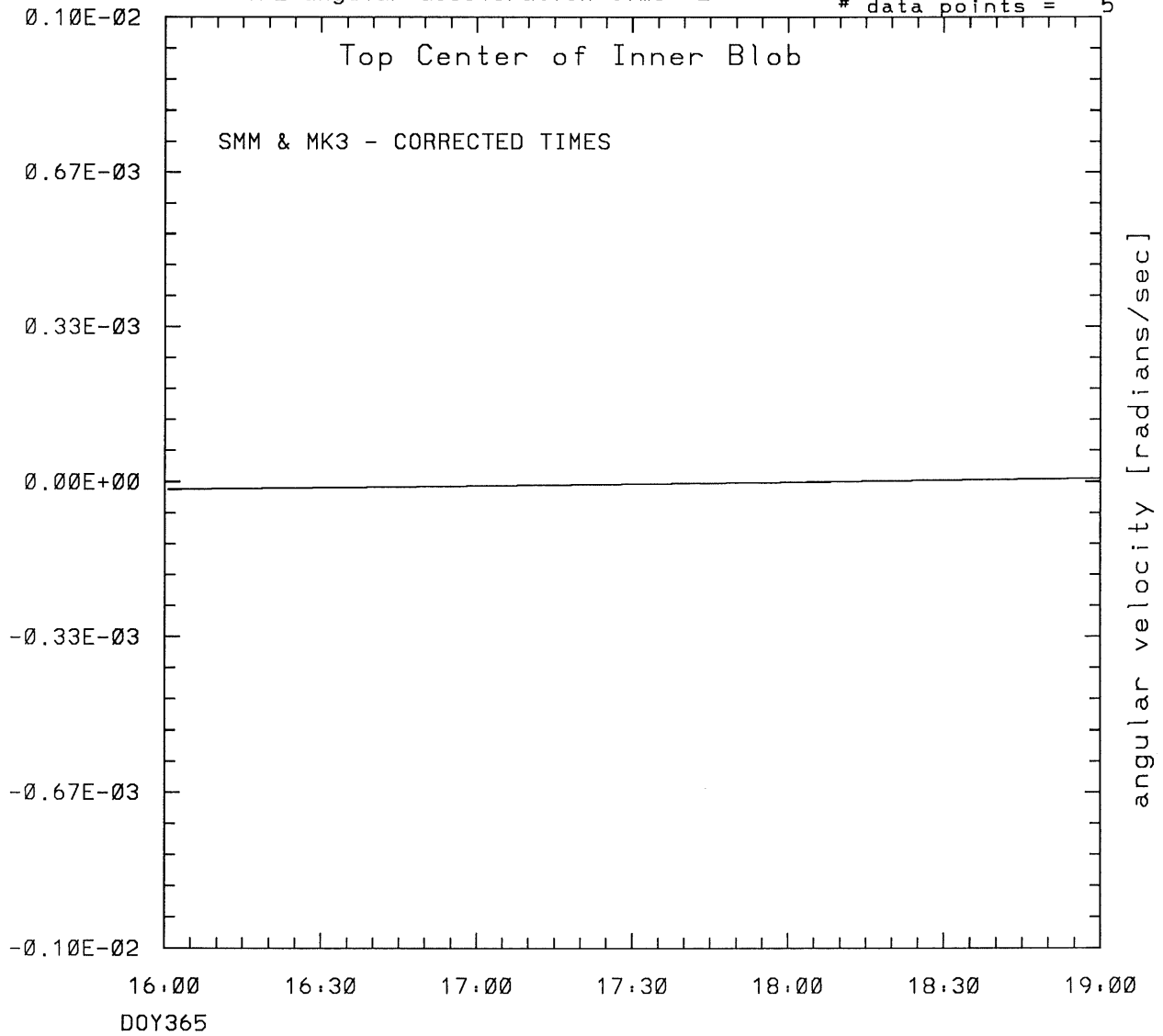


tstart=DOY365 15:45 from derivative=0
Event begins at 2.43 Solar Radii
radial acceleration=0.436E-01 km/sec**2

SMM C/P 1988 DOY365 316 +/- 2 degrees

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

data points = 5



angular acceleration = $0.218E-08 \pm 0.141E-08$ [rad/sec**2]

This is a 1 order run

INPUT:

year	day	time	radii	radius	angle	error in angle	datatype
1988	365	16:12:16	2.50 +/-	0.10	318.0 +/-	0.5	SMM
1988	365	16:20:33	2.56 +/-	0.10	318.0 +/-	0.5	SMM
1988	365	16:45:17	2.90 +/-	0.10	316.5 +/-	0.5	SMM
1988	365	17:37:43	3.80 +/-	0.10	316.0 +/-	1.0	SMM
1988	365	18: 2:30	4.60 +/-	0.10	315.0 +/-	1.0	SMM

Structure being measured:
Top Center of Inner Blob

OUTPUT:

START TIME:

Event began at t = 0 + -0.633E+02 +/- 0.256E+01 [minutes]
In more convenient units:
Event began at DOY 365 14:57 +/- 0.256E+01 [minutes]

Origin defined at DOY365 16: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 214. +/- 17. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.217E+01 +/- 0.108E+00 [solar radii]
c(2) = 0.185E-01 +/- 0.147E-02 [radii/min]
c(2) = 0.214E+03 +/- 0.170E+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)= 0.12487E+00 [radii] see Bevington pg. 114
error in c(2)= 0.16937E-02 [radii/min] see Bevington pg. 114

ANGULAR INFORMATION:

ANGULAR VELOCITY = -0.8187E-05 +/- 0.1534E-05 [radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 318. +/- 0. [degrees]
a(2) = -0.281E-01 +/- 0.527E-02 [degrees/min]
a(2) = -0.819E-05 +/- 0.153E-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 16:12 = 214. km/sec

The RADIAL velocity at 16:20 = 214. km/sec

The RADIAL velocity at 16:45 = 214. km/sec

The RADIAL velocity at 17:37 = 214. km/sec

The RADIAL velocity at 18: 2 = 214. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.91
Standard Deviation in start time measurement = 0.433E+02
Error in time = 0.15375E+02 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.202E-01
Reduced Chi Squared = 0.102E+00
Chi Squared = 0.307E+00
The probability for exceeding chi square = 0.996E+00

The correlation coefficient = 0.988E+00
The probability that no LINEAR correlation exists between the variables = 0.1648
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	365	16:12:16	2.50 +/- 0.10	318.0 +/- 0.5	SMM		
1988	365	16:20:33	2.56 +/- 0.10	318.0 +/- 0.5	SMM		
1988	365	16:45:17	2.90 +/- 0.10	316.5 +/- 0.5	SMM		
1988	365	17:37:43	3.80 +/- 0.10	316.0 +/- 1.0	SMM		
1988	365	18: 2:30	4.60 +/- 0.10	315.0 +/- 1.0	SMM		

Structure being measured:
Top Center of Inner Blob

OUTPUT:

START TIME:

tstart=DOY365 15:45 from derivative = 0
Event begins at 2.43 Solar Radii
Origin defined at DOY365 16: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.436E-01 +/- 0.910E-02 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.246E+01 +/- 0.732E-01 [solar radii]
c(2) = 0.341E-02 +/- 0.320E-02 [radii/min]
c(2) = 0.395E+02 +/- 0.371E+02 [km/sec]
c(3) = 0.113E-03 +/- 0.235E-04 [radii/min**2]
c(3) = 0.436E-01 +/- 0.910E-02 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.89693E-01 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.23815E-01 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.39155E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.15202E-02 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.28828E-04 [radii/min**2] Bevington pg 154 (8-30)
Exact error in c(3) = 0.11323E-04 [radii/min**2] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

ANGULAR ACCELERATION= 0.2175E-08 +/- 0.1415E-08[radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 319. +/- 0. [degrees]
a(2) = -0.562E-01 +/- 0.188E-01 [degrees/min]
a(2) = -0.164E-04 +/- 0.548E-05 [rad/sec]
a(3) = 0.224E-03 +/- 0.146E-03 [degrees/min**2]
a(3) = 0.218E-08 +/- 0.141E-08 [rad/sec**2]

The RADIAL velocity at 16:12 = 72. km/sec

The RADIAL velocity at 16:20 = 93. km/sec

The RADIAL velocity at 16:45 = 158. km/sec

The RADIAL velocity at 17:37 = 295. km/sec

The RADIAL velocity at 18: 2 = 360. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.91

Standard Deviation in start time measurement = 0.433E+02

Value of reduced Chi Squared returned from nllst2 = 0.311E-02

Reduced Chi Squared = 0.170E-01

Chi Squared = 0.340E-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 = 0.9876E+00

The correlation between the data and the time**2 term = 0.9980E+00

The correlation between the data and the complete equation of motion=0.9972E+00

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