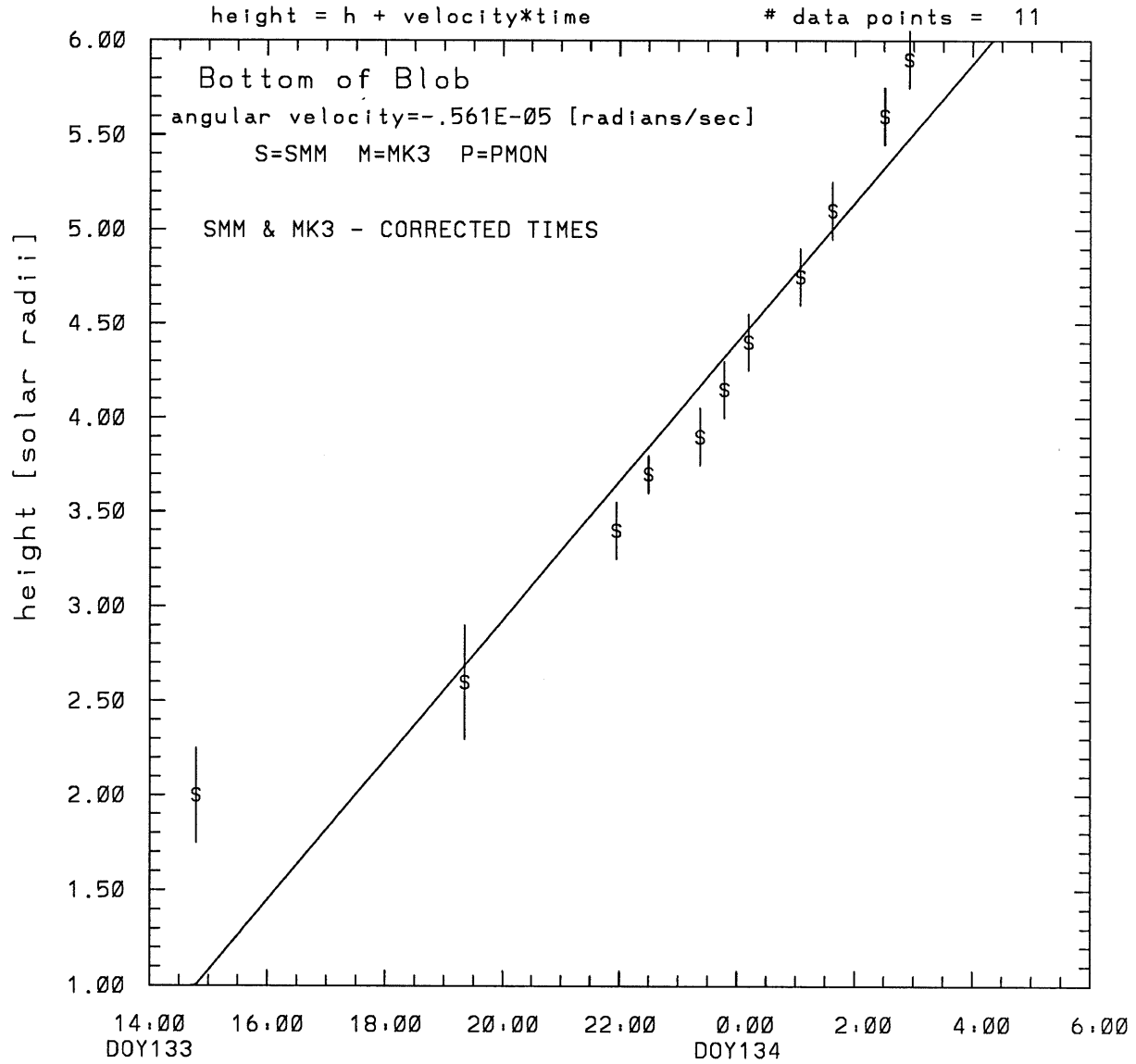


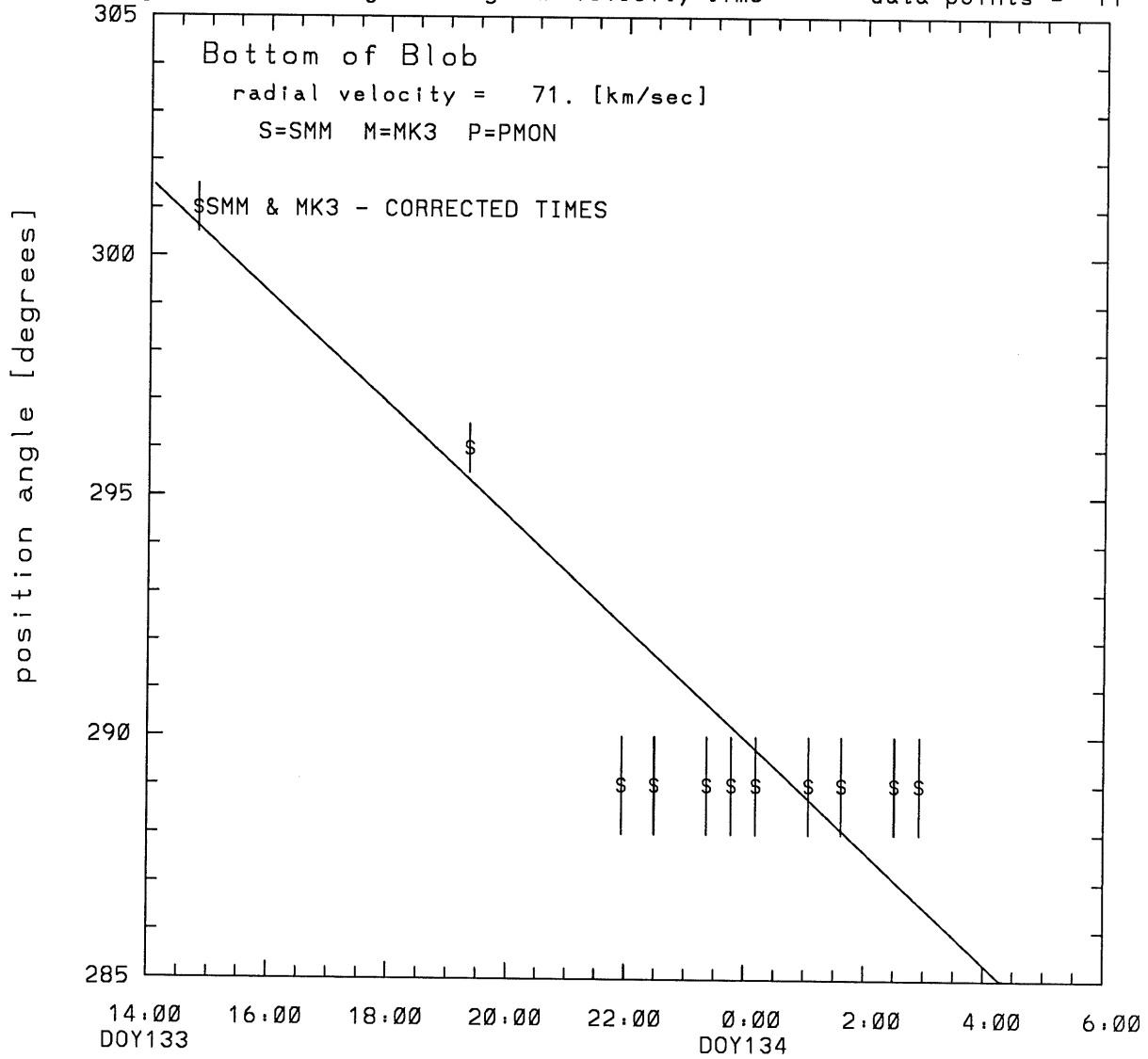
SMM C/P 1988 DOY133 290 +/- 11 degrees



tstart=DOY133 14.47 +/- 3.6 [min.]  
radial velocity= 71. +/- 7. [km/sec]

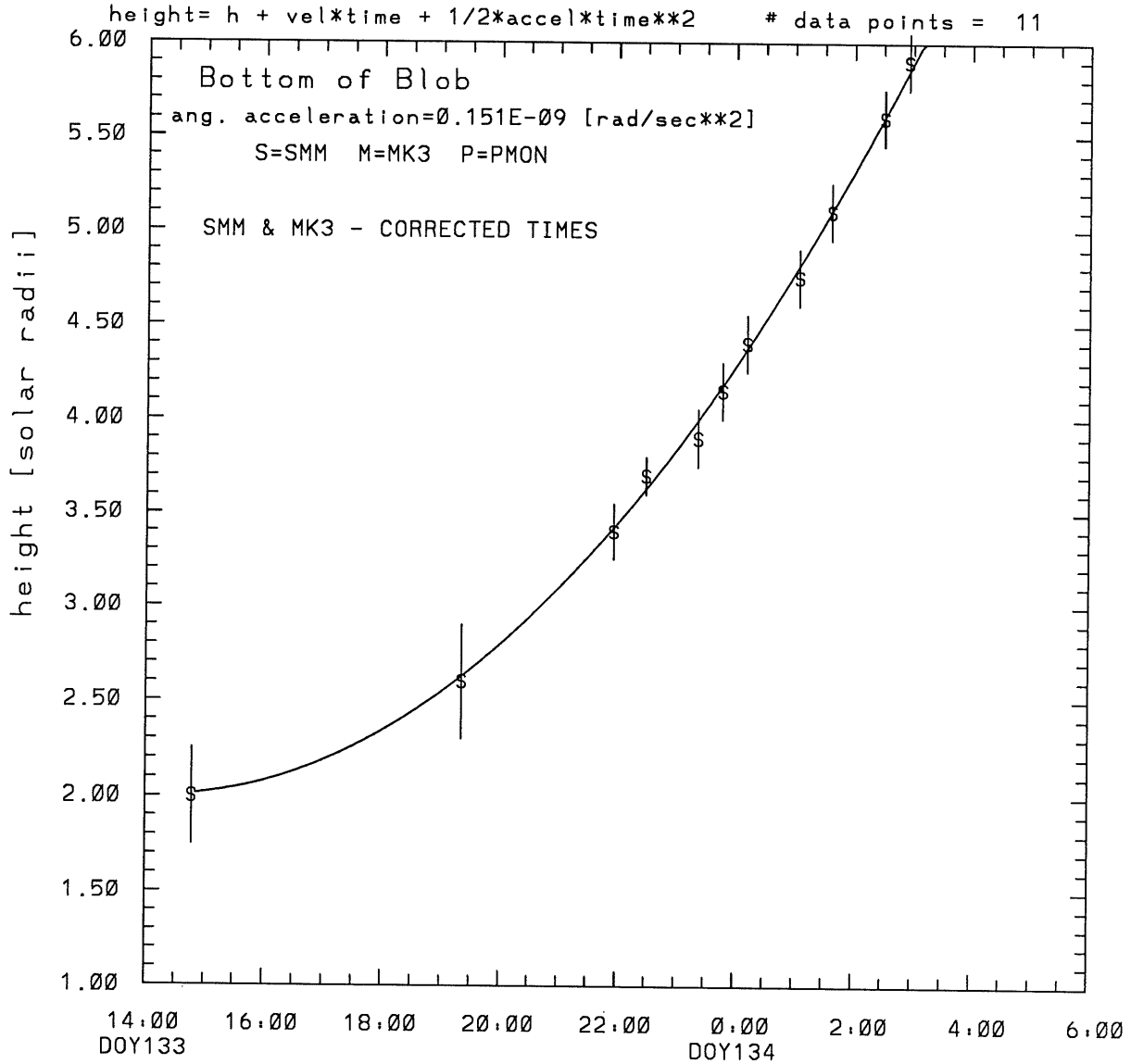
SMM C/P 1988 DOY133 290 +/- 11 degrees

angle = initial angle + angular velocity \* time # data points = 11



tstart=DOY133 14:47 +/- 3.6 [min.]  
angular velocity=-.561E-05 +/- 0.537E-06 [rad/sec]

SMM C/P 1988 DOY133 290 +/- 11 degrees



tstart=DOY133 14:16 from derivative=0

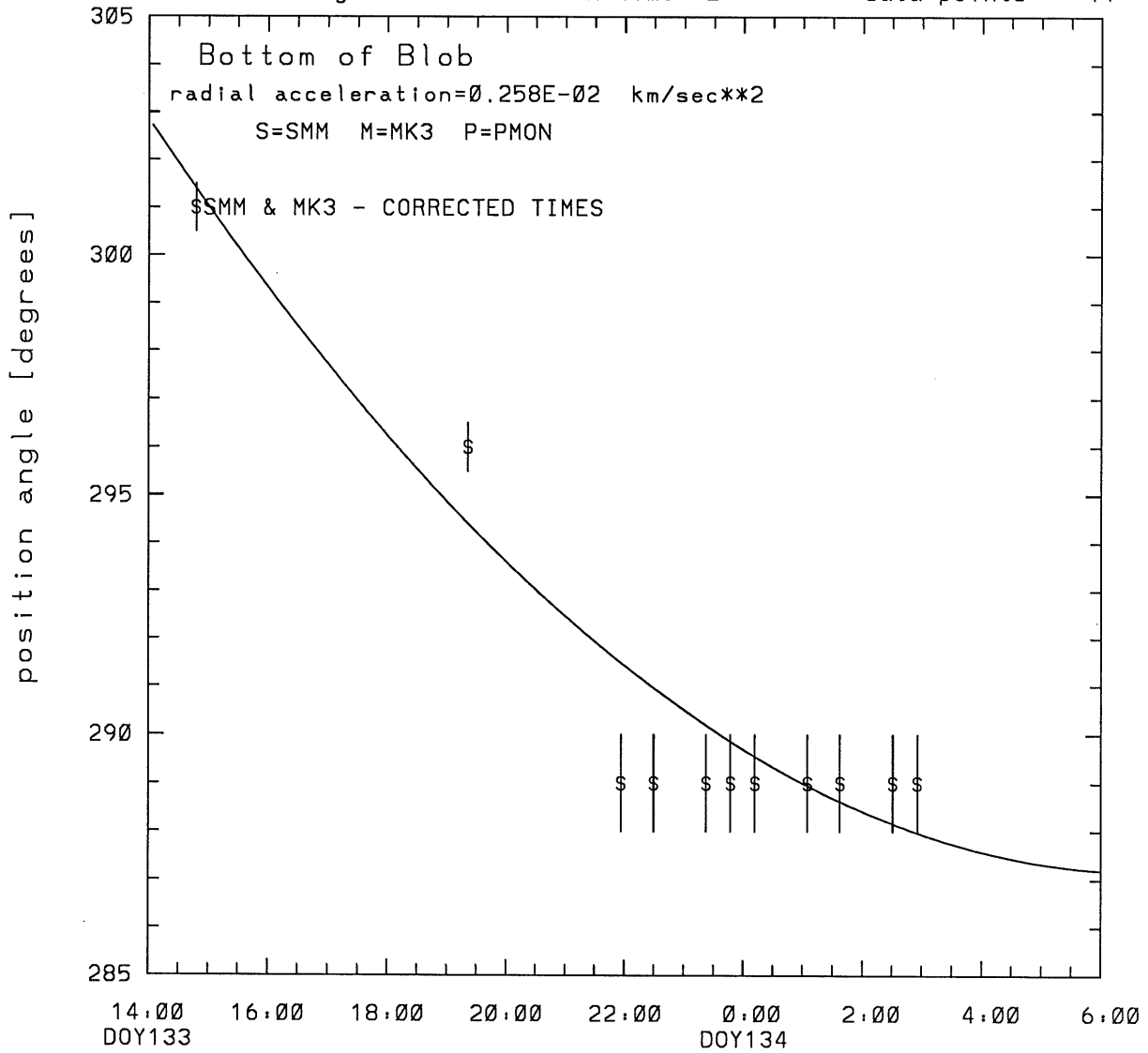
Event begins at 2.01 Solar Radii

radial acceleration =  $0.0026 \pm 0.0002$  [km/sec\*\*2]

SMM C/P 1988 DOY133 290 +/- 11 degrees

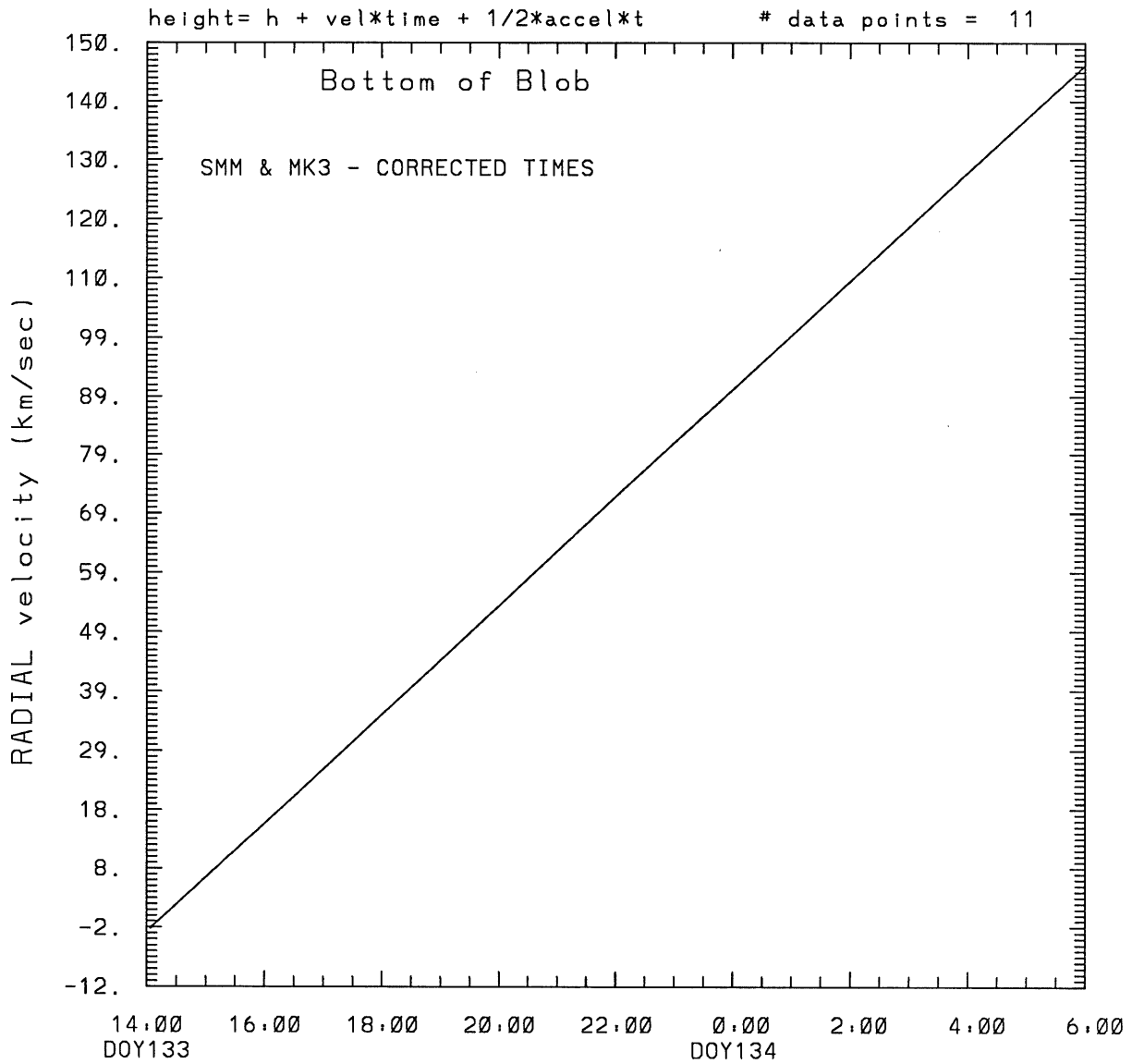
angle = initial angle + angular velocity\*time  
+ 1/2 angular acceleration\*time\*\*2

# data points = 11



tstart=DOY133 14:16 from derivative=0  
angular acceleration=0.151E-09 +/- 0.760E-10 [rad/sec\*\*2]

SMM C/P 1988 DOY133 290 +/- 11 degrees

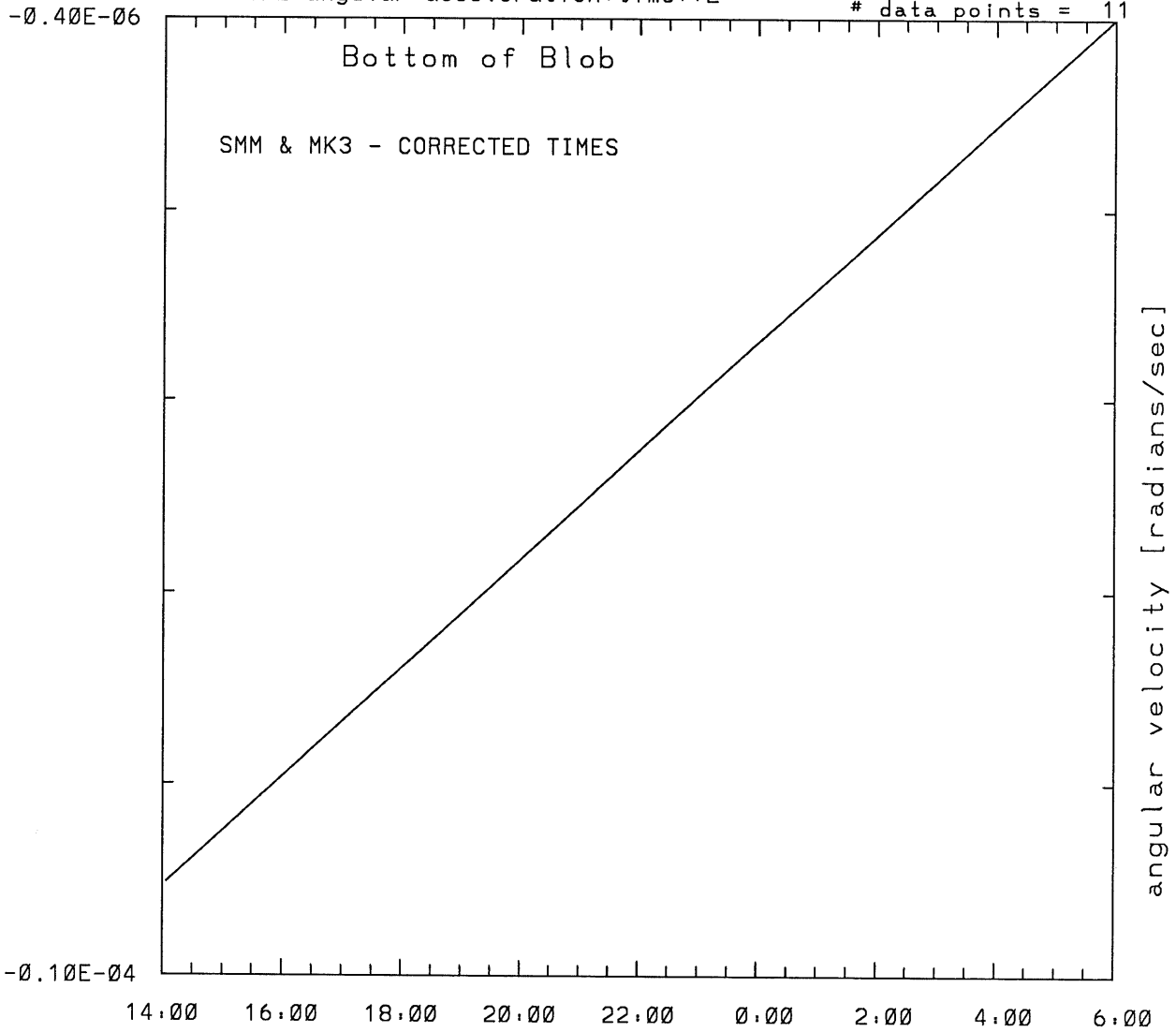


tstart=DOY133 14:16 from derivative=0  
Event begins at 2.01 Solar Radii  
radial acceleration=0.258E-02 km/sec\*\*2

SMM C/P 1988 DOY133 290 +/- 11 degrees

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

# data points = 11



tstart=DOY133 14:16 from derivative=0  
angular acceleration=0.151E-09 +/-  
0.760E-10 [rad/sec\*\*2]

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

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

year	day	time	radii	radius	angle	error in angle	error in angle	datatype
1988	133	14:47:23	2.00 +/-	0.25	301.0 +/-	0.5		SMM
1988	133	19:21:20	2.60 +/-	0.30	296.0 +/-	0.5		SMM
1988	133	21:56:30	3.40 +/-	0.15	289.0 +/-	1.0		SMM
1988	133	22:29:30	3.70 +/-	0.10	289.0 +/-	1.0		SMM
1988	133	23:22:22	3.90 +/-	0.15	289.0 +/-	1.0		SMM
1988	133	23:47:10	4.15 +/-	0.15	289.0 +/-	1.0		SMM
1988	134	0:11:54	4.40 +/-	0.15	289.0 +/-	1.0		SMM
1988	134	1: 4:51	4.75 +/-	0.15	289.0 +/-	1.0		SMM
1988	134	1:37:41	5.10 +/-	0.15	289.0 +/-	1.0		SMM
1988	134	2:30:32	5.60 +/-	0.15	289.0 +/-	1.0		SMM
1988	134	2:55:20	5.90 +/-	0.15	289.0 +/-	1.0		SMM

\*\*\*\*\*  
Structure being measured:  
Bottom of Blob  
\*\*\*\*\*

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

START TIME:

Event began at t = 0 + 0.469E+02 +/- 0.360E+01 [minutes]  
In more convenient units:  
Event began at DOY 133 14:47 +/- 0.360E+01 [minutes]

Origin defined at DOY133 14: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 71. +/- 7. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

- c(1) = 0.712E+00 +/- 0.365E+00 [solar radii]
- c(2) = 0.615E-02 +/- 0.603E-03 [radii/min]
- c(2) = 0.713E+02 +/- 0.700E+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)= 0.35099E+00 [radii] see Bevington pg. 114  
error in c(2)= 0.60349E-03 [radii/min] see Bevington pg. 114

ANGULAR INFORMATION:

ANGULAR VELOCITY = -0.5614E-05 +/- 0.5372E-06[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

- a(1) = 302. +/- 1. [degrees]
- a(2) = -0.193E-01 +/- 0.185E-02 [degrees/min]
- a(2) = -0.561E-05 +/- 0.537E-06 [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 14:47 = 71. km/sec  
The RADIAL velocity at 19:21 = 71. km/sec  
The RADIAL velocity at 21:56 = 71. km/sec  
The RADIAL velocity at 22:29 = 71. km/sec  
The RADIAL velocity at 23:22 = 71. km/sec  
The RADIAL velocity at 23:47 = 71. km/sec  
The RADIAL velocity at 0:11 = 71. km/sec  
The RADIAL velocity at 1: 4 = 71. km/sec  
The RADIAL velocity at 1:37 = 71. km/sec  
The RADIAL velocity at 2:30 = 71. km/sec  
The RADIAL velocity at 2:55 = 71. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 1.20  
Standard Deviation in start time measurement = 0.201E+03  
Error in time = 0.19603E+03 using best fit method  
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.848E-01  
Reduced Chi Squared = 0.517E+00  
Chi Squared = 0.465E+01  
The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.958E+00  
The probability that no LINEAR correlation exists between the variables = 0.35821  
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	133	14:47:23	2.00 +/- 0.25	301.0 +/- 0.5			SMM
1988	133	19:21:20	2.60 +/- 0.30	296.0 +/- 0.5			SMM
1988	133	21:56:30	3.40 +/- 0.15	289.0 +/- 1.0			SMM
1988	133	22:29:30	3.70 +/- 0.10	289.0 +/- 1.0			SMM
1988	133	23:22:22	3.90 +/- 0.15	289.0 +/- 1.0			SMM
1988	133	23:47:10	4.15 +/- 0.15	289.0 +/- 1.0			SMM
1988	134	0:11:54	4.40 +/- 0.15	289.0 +/- 1.0			SMM
1988	134	1: 4:51	4.75 +/- 0.15	289.0 +/- 1.0			SMM
1988	134	1:37:41	5.10 +/- 0.15	289.0 +/- 1.0			SMM
1988	134	2:30:32	5.60 +/- 0.15	289.0 +/- 1.0			SMM
1988	134	2:55:20	5.90 +/- 0.15	289.0 +/- 1.0			SMM

\*\*\*\*\*  
Structure being measured:  
Bottom of Blob  
\*\*\*\*\*

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

START TIME:

tstart=DOY133 14:16 from derivative = 0  
Event begins at 2.01 Solar Radii  
Origin defined at DOY133 14: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.258E-02 +/- 0.163E-03 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.201E+01 +/- 0.109E+00 [solar radii]  
c(2) = -0.218E-03 +/- 0.420E-03 [radii/min]  
c(2) = -0.253E+01 +/- 0.487E+01 [km/sec]  
c(3) = 0.668E-05 +/- 0.423E-06 [radii/min\*\*2]  
c(3) = 0.258E-02 +/- 0.163E-03 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.63702E-01 [radii] Bevington pg 154 (8-30)  
Exact error in c(1) = 0.53984E-02 [radii] Bevington pg 154 (8-28)  
Approximate error in c(2) = 0.30305E-03 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.34096E-04 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.34541E-06 [radii/min\*\*2] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.40396E-07 [radii/min\*\*2] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

ANGULAR ACCELERATION= 0.1512E-09 +/- 0.7598E-10[radians/sec\*\*2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 303. +/- 1. [degrees]  
a(2) = -0.313E-01 +/- 0.623E-02 [degrees/min]

a(2) = -0.910E-05 +/- 0.181E-05 [rad/sec]  
a(3) = 0.156E-04 +/- 0.784E-05 [degrees/min\*\*2]  
a(3) = 0.151E-09 +/- 0.760E-10 [rad/sec\*\*2]

The RADIAL velocity at 14:47 = 5. km/sec  
The RADIAL velocity at 19:21 = 47. km/sec  
The RADIAL velocity at 21:56 = 71. km/sec  
The RADIAL velocity at 22:29 = 76. km/sec  
The RADIAL velocity at 23:22 = 85. km/sec  
The RADIAL velocity at 23:47 = 88. km/sec  
The RADIAL velocity at 0:11 = 92. km/sec  
The RADIAL velocity at 1: 4 = 100. km/sec  
The RADIAL velocity at 1:37 = 106. km/sec  
The RADIAL velocity at 2:30 = 114. km/sec  
The RADIAL velocity at 2:55 = 118. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 1.20  
Standard Deviation in start time measurement = 0.201E+03  
Value of reduced Chi Squared returned from nllst2 = 0.328E-02  
Reduced Chi Squared = 0.173E-01  
Chi Squared = 0.138E+00  
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 = 0.7184E+00  
The correlation between the data and the time\*\*2 term = 0.8343E+00  
The correlation between the data and the complete equation of motion=0.9949E+00  
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]