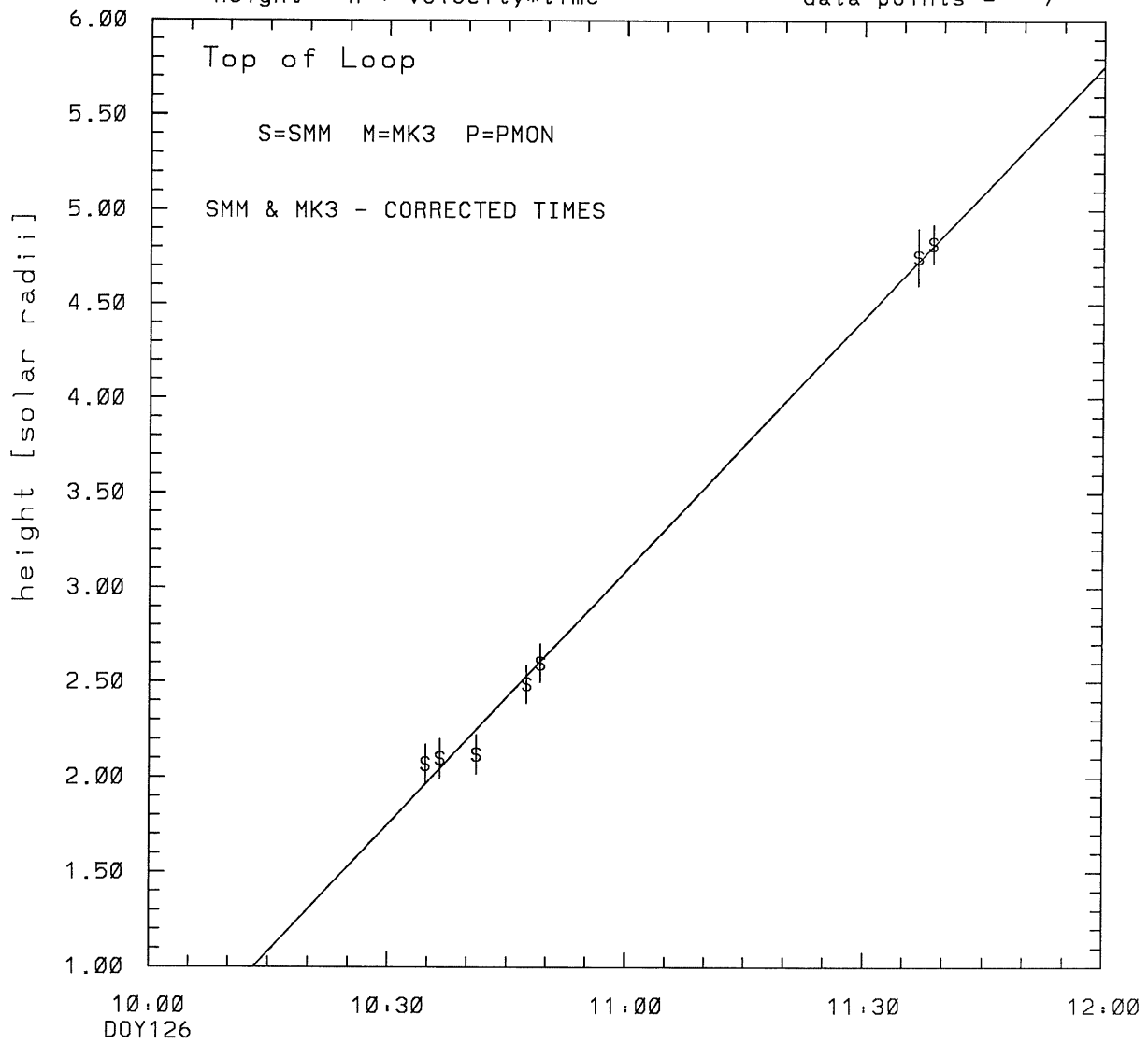


SMM C/P 1980 DOY126 300 +/- 0 degrees

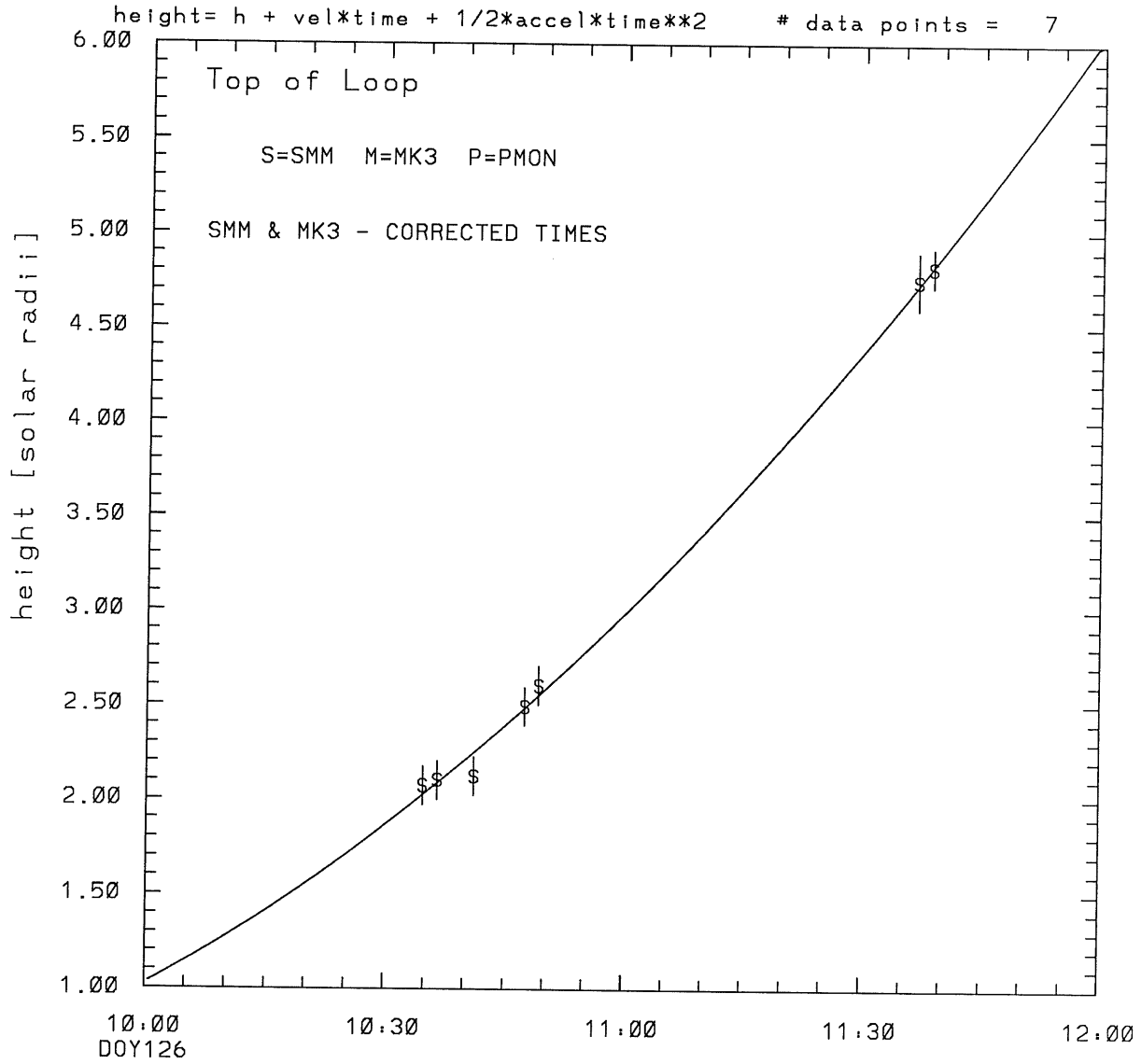
height = h + velocity\*time

# data points = 7



tstart=DOY126 10:13 +/- 0.3 [min.]  
radial velocity= 516. +/- 14. [km/sec]

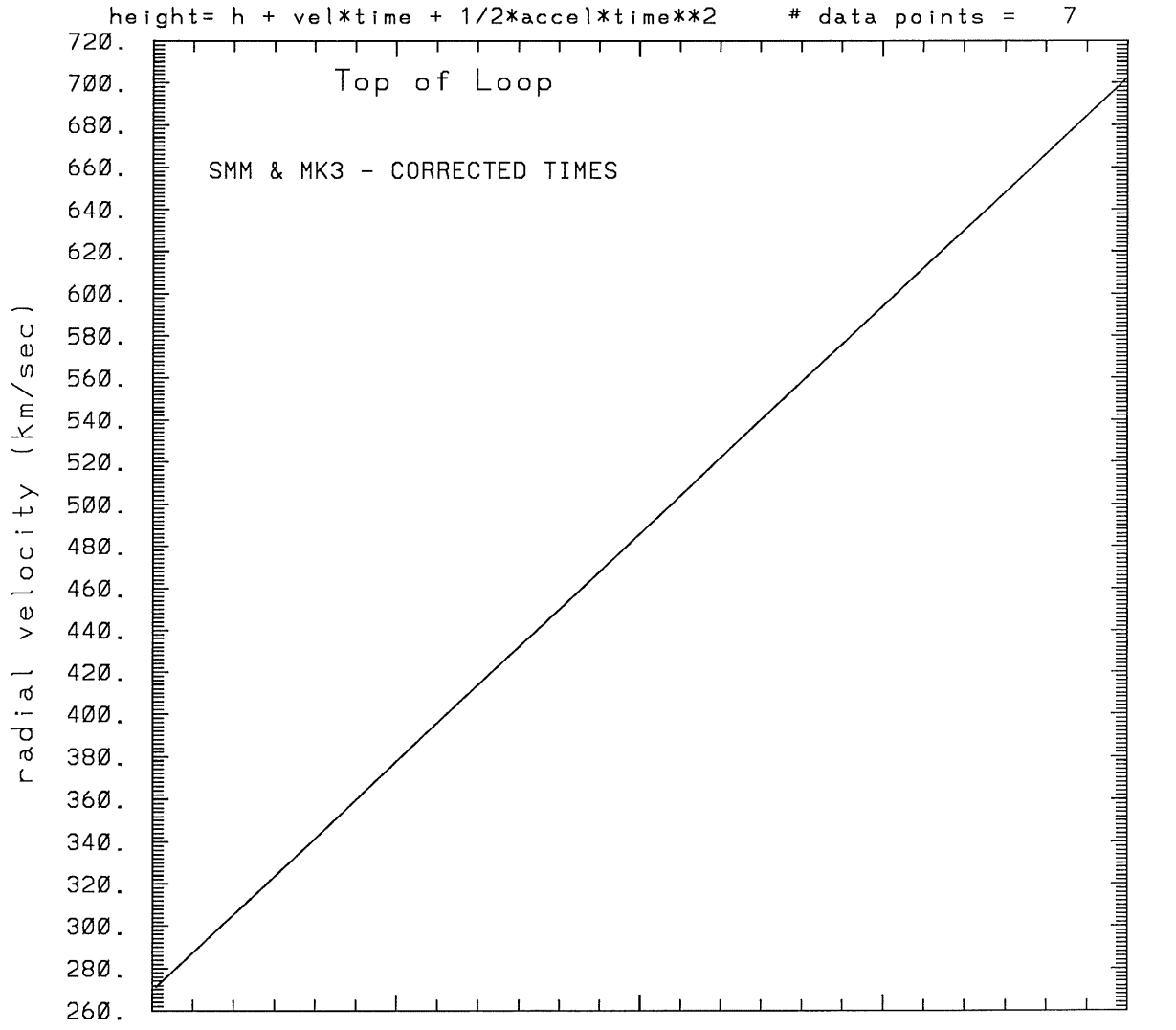
SMM C/P 1980 DOY126 300 +/- 0 degrees



tstart=DOY126 9:59 +/- 0.1 [min.]

radial acceleration = 0.0601 +/- 0.0364 [km/sec\*\*2]

SMM C/P 1980 DOY126 300 +/- 0 degrees



10:00  
DOY126

tstart=DOY126 9:59 +/- 0.1 [min.]

radial acceleration=0.601E-01 km/sec\*\*2

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

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

year	day	time	radii	radius	error in	angle	error in	datatype
1980	126	10:34:47	2.07	+/- 0.10	300.0	+/- 0.5	SMM	
1980	126	10:36:37	2.10	+/- 0.10	300.0	+/- 0.5	SMM	
1980	126	10:41:12	2.12	+/- 0.10	300.0	+/- 0.5	SMM	
1980	126	10:47:34	2.49	+/- 0.10	300.0	+/- 0.5	SMM	
1980	126	10:49:17	2.60	+/- 0.10	300.0	+/- 0.5	SMM	
1980	126	11:36:49	4.75	+/- 0.15	300.0	+/- 1.0	SMM	
1980	126	11:38:40	4.82	+/- 0.10	300.0	+/- 1.0	SMM	

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

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

START TIME:

Event began at  $t = 0 + 0.131E+02 \pm 0.299E+00$  [minutes]  
In more convenient units:  
Event began at DOY 126 10:13  $\pm 0.299E+00$  [minutes]

Origin defined at DOY126 10: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 516.  $\pm$  14. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.416E+00 \pm 0.729E-01$  [solar radii]  
 $c(2) = 0.445E-01 \pm 0.122E-02$  [radii/min]  
 $c(2) = 0.516E+03 \pm 0.142E+02$  [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  $c(1) = 0.76411E-01$  [radii] see Bevington pg. 114  
error in  $c(2) = 0.12071E-02$  [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) = 300. +/- 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 10:34 = 0.000E+00 km/sec

The TOTAL velocity at 10:34 = 516. km/sec

The TANGENTIAL velocity at 10:36 = 0.000E+00 km/sec

The TOTAL velocity at 10:36 = 516. km/sec

The TANGENTIAL velocity at 10:41 = 0.000E+00 km/sec

The TOTAL velocity at 10:41 = 516. km/sec

The TANGENTIAL velocity at 10:47 = 0.000E+00 km/sec

The TOTAL velocity at 10:47 = 516. km/sec

The TANGENTIAL velocity at 10:49 = 0.000E+00 km/sec

The TOTAL velocity at 10:49 = 516. km/sec

The TANGENTIAL velocity at 11:36 = 0.000E+00 km/sec

The TOTAL velocity at 11:36 = 516. km/sec

The TANGENTIAL velocity at 11:38 = 0.000E+00 km/sec

The TOTAL velocity at 11:38 = 516. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 1.24

Standard Deviation in start time measurement = 0.257E+02

Error in time = 0.41228E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.604E-02

Reduced Chi Squared = 0.160E-01

Chi Squared = 0.801E-01

The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.998E+00

The probability that no LINEAR correlation exists between the variables = 0.2707E-06

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
1980	126	10:34:47	2.07	+/- 0.10	300.0	+/- 0.5	SMM
1980	126	10:36:37	2.10	+/- 0.10	300.0	+/- 0.5	SMM
1980	126	10:41:12	2.12	+/- 0.10	300.0	+/- 0.5	SMM
1980	126	10:47:34	2.49	+/- 0.10	300.0	+/- 0.5	SMM
1980	126	10:49:17	2.60	+/- 0.10	300.0	+/- 0.5	SMM
1980	126	11:36:49	4.75	+/- 0.15	300.0	+/- 1.0	SMM
1980	126	11:38:40	4.82	+/- 0.10	300.0	+/- 1.0	SMM

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

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

START TIME:

Event began at  $t = 0 + -0.107E+01 +/- 0.141E+00$  [minutes]  
In more convenient units:  
Event began at DOY 126 9:59 +/- 0.141E+00 [minutes]

Origin defined at DOY126 10: 0

RADIAL INFORMATION:

RADIAL ACCELERATION =  $0.601E-01 +/- 0.364E-01$  km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.102E+01 +/- 0.375E+00$  [solar radii]  
 $c(2) = 0.232E-01 +/- 0.130E-01$  [radii/min]  
 $c(2) = 0.269E+03 +/- 0.150E+03$  [km/sec]  
 $c(3) = 0.155E-03 +/- 0.942E-04$  [radii/min\*\*2]  
 $c(3) = 0.601E-01 +/- 0.364E-01$  [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in  $c(1) = 0.42090E+00$  [radii] Bevington pg 154 (8-30)  
Exact error in  $c(1) = 0.58152E-01$  [radii] Bevington pg 154 (8-28)  
Approximate error in  $c(2) = 0.14548E-01$  [radii/min] Bevington pg 154 (8-30)  
Exact error in  $c(2) = 0.18994E-02$  [radii/min] Bevington pg 154 (8-28)

Approximate error in c(3) = 0.10580E-03 [radii/min\*\*] Bevington pg 154 (8-30)

Exact error in c(3) = 0.13374E-04 [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) = 300. +/- 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 10:34 = 0.000E+00 km/sec

The TOTAL velocity at 10:34 = 395. km/sec

The TANGENTIAL velocity at 10:36 = 0.000E+00 km/sec

The TOTAL velocity at 10:36 = 402. km/sec

The TANGENTIAL velocity at 10:41 = 0.000E+00 km/sec

The TOTAL velocity at 10:41 = 418. km/sec

The TANGENTIAL velocity at 10:47 = 0.000E+00 km/sec

The TOTAL velocity at 10:47 = 441. km/sec

The TANGENTIAL velocity at 10:49 = 0.000E+00 km/sec

The TOTAL velocity at 10:49 = 447. km/sec

The TANGENTIAL velocity at 11:36 = 0.000E+00 km/sec

The TOTAL velocity at 11:36 = 619. km/sec

The TANGENTIAL velocity at 11:38 = 0.000E+00 km/sec

The TOTAL velocity at 11:38 = 625. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 1.24

Standard Deviation in start time measurement = 0.257E+02

Value of reduced Chi Squared returned from nllst2 = 0.469E-02

Reduced Chi Squared = 0.169E-01

Chi Squared = 0.675E-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 = 0.9403E+00

The correlation between the data and the time\*\*2 term = 0.9398E+00

The correlation between the data and the complete equation of motion = 0.9969E+00

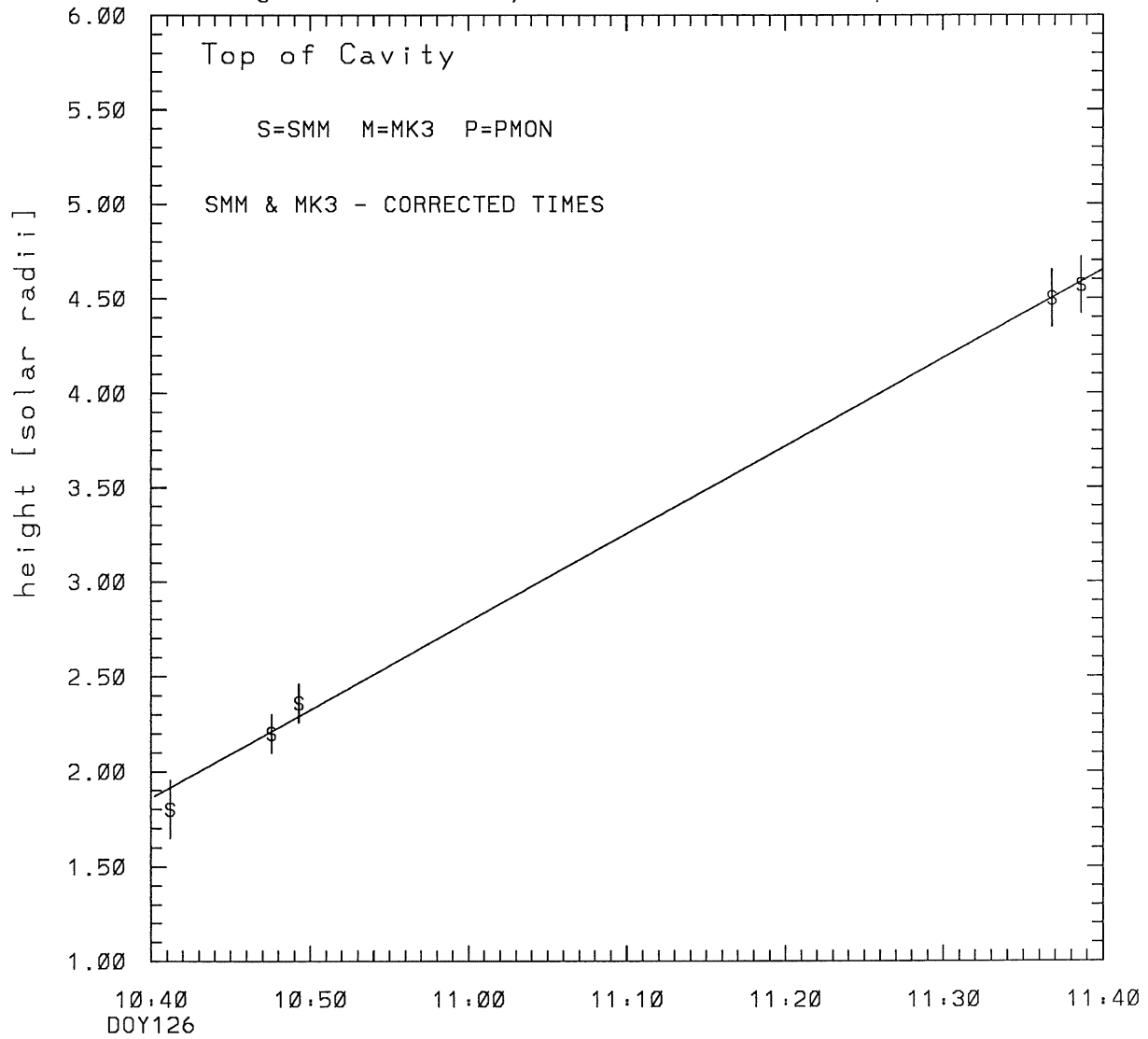
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]



SMM C/P 1980 DOY126 300 +/- 0 degrees

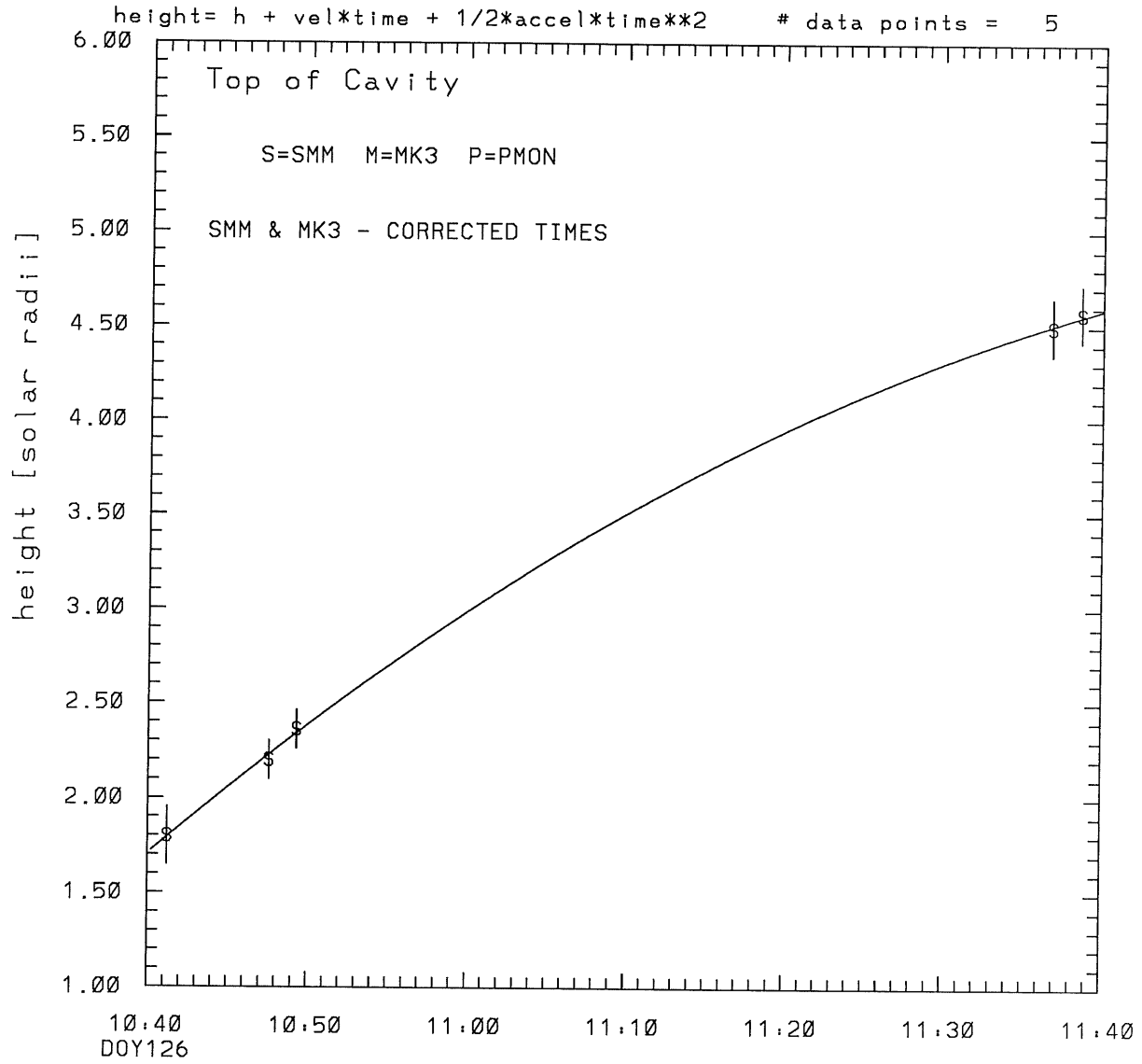
height = h + velocity\*time

# data points = 5



tstart=DOY126 10:22 +/- 0.1 [min.]  
radial velocity= 540. +/- 15. [km/sec]

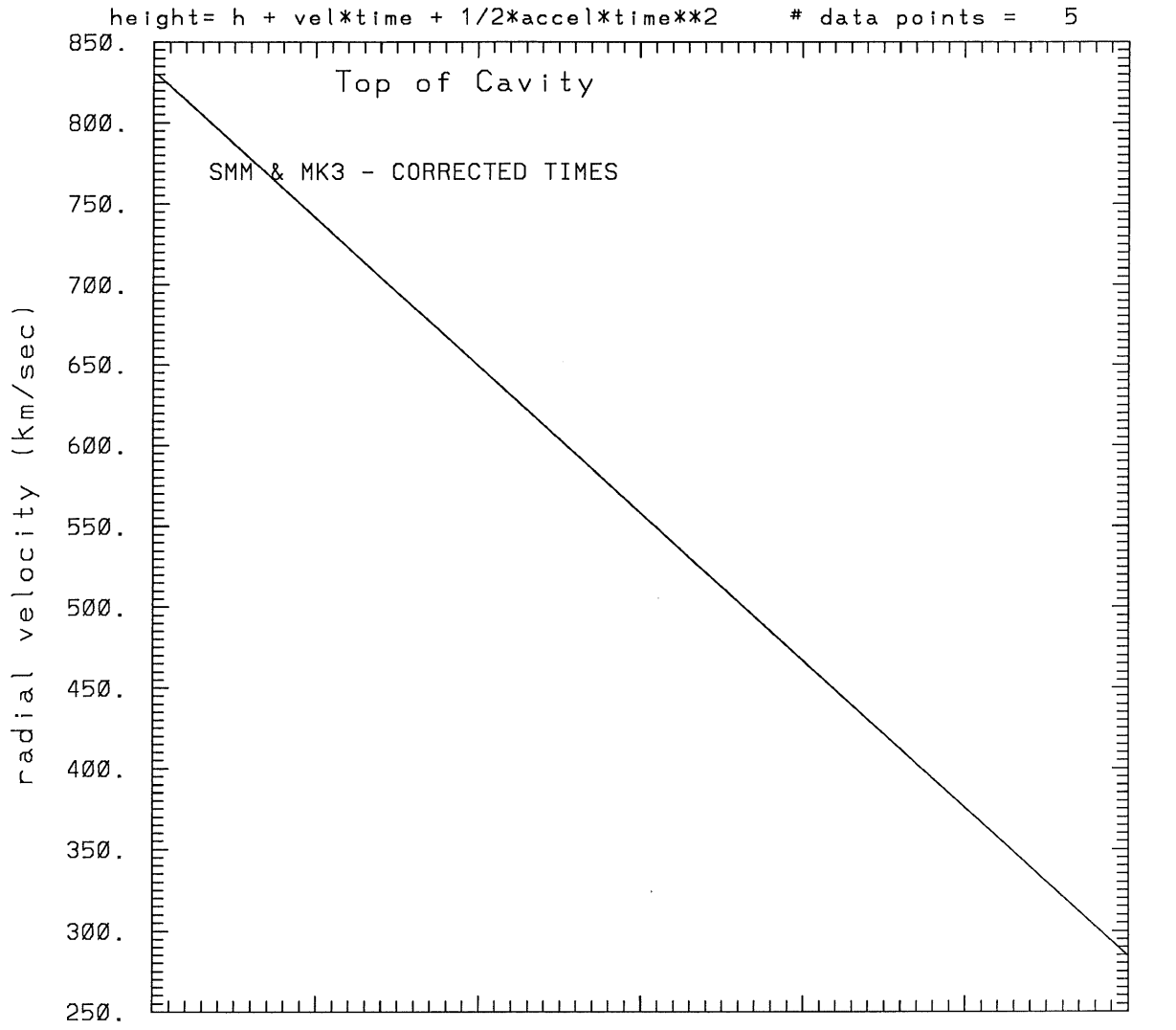
SMM C/P 1980 DOY126 300 +/- 0 degrees



tstart=DOY126 10:31 +/- 0.9 [min.]

radial acceleration =  $-0.1521 +/- 0.0324$  [km/sec\*\*2]

SMM C/P 1980 DOY126 300 +/- 0 degrees



DOY126

tstart=DOY126 10:31 +/- 0.9 [min.]

radial acceleration =  $-.152E+00$  km/sec\*\*2

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

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

year	day	time	radii	radius	error in	angle	error in	datatype
1980	126	10:41:12	1.80	+/- 0.15	300.0	+/- 0.5	SMM	
1980	126	10:47:34	2.20	+/- 0.10	300.0	+/- 0.5	SMM	
1980	126	10:49:17	2.36	+/- 0.10	300.0	+/- 0.5	SMM	
1980	126	11:36:49	4.50	+/- 0.15	300.0	+/- 1.0	SMM	
1980	126	11:38:40	4.57	+/- 0.15	300.0	+/- 1.0	SMM	

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

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

START TIME:

Event began at  $t = 0 + -0.184E+02 +/- 0.828E-01$  [minutes]  
In more convenient units:  
Event began at DOY 126 10:22 +/- 0.828E-01 [minutes]

Origin defined at DOY126 10:40

RADIAL INFORMATION:

RADIAL VELOCITY = 540. +/- 15. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.186E+01 +/- 0.388E-01$  [solar radii]  
 $c(2) = 0.465E-01 +/- 0.127E-02$  [radii/min]  
 $c(2) = 0.540E+03 +/- 0.147E+02$  [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  $c(1) = 0.50624E-01$  [radii] see Bevington pg. 114  
error in  $c(2) = 0.13712E-02$  [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) = 300. +/- 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 10:41 = 0.000E+00 km/sec

The TOTAL velocity at 10:41 = 540. km/sec

The TANGENTIAL velocity at 10:47 = 0.000E+00 km/sec

The TOTAL velocity at 10:47 = 540. km/sec

The TANGENTIAL velocity at 10:49 = 0.000E+00 km/sec

The TOTAL velocity at 10:49 = 540. km/sec

The TANGENTIAL velocity at 11:36 = 0.000E+00 km/sec

The TOTAL velocity at 11:36 = 540. km/sec

The TANGENTIAL velocity at 11:38 = 0.000E+00 km/sec

The TOTAL velocity at 11:38 = 540. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 1.34

Standard Deviation in start time measurement = 0.255E+02

Error in time = 0.29095E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.409E-02

Reduced Chi Squared = 0.982E-02

Chi Squared = 0.294E-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 = 0.4783E-04

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

\*\*\*\*\*  
This is a 2 order run  
\*\*\*\*\*

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

year	doy	time	radii	error in radius	error in angle	datatype
1980	126	10:41:12	1.80	+/- 0.15	300.0 +/- 0.5	SMM
1980	126	10:47:34	2.20	+/- 0.10	300.0 +/- 0.5	SMM
1980	126	10:49:17	2.36	+/- 0.10	300.0 +/- 0.5	SMM
1980	126	11:36:49	4.50	+/- 0.15	300.0 +/- 1.0	SMM
1980	126	11:38:40	4.57	+/- 0.15	300.0 +/- 1.0	SMM

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

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

START TIME:

Event began at  $t = 0 + -0.936E+01 +/- 0.858E+00$  [minutes]  
In more convenient units:  
Event began at DOY 126 10:31 +/- 0.858E+00 [minutes]

Origin defined at DOY126 10:40

RADIAL INFORMATION:

RADIAL ACCELERATION =  $-0.152E+00 +/- 0.324E-01$  km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.171E+01 +/- 0.360E-01$  [solar radii]  
 $c(2) = 0.717E-01 +/- 0.539E-02$  [radii/min]  
 $c(2) = 0.832E+03 +/- 0.625E+02$  [km/sec]  
 $c(3) = -0.393E-03 +/- 0.838E-04$  [radii/min\*\*2]  
 $c(3) = -0.152E+00 +/- 0.324E-01$  [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in  $c(1) = 0.31742E-01$  [radii] Bevington pg 154 (8-30)  
Exact error in  $c(1) = 0.76175E-02$  [radii] Bevington pg 154 (8-28)  
Approximate error in  $c(2) = 0.52395E-02$  [radii/min] Bevington pg 154 (8-30)  
Exact error in  $c(2) = 0.20639E-02$  [radii/min] Bevington pg 154 (8-28)  
Approximate error in  $c(3) = 0.82860E-04$  [radii/min\*\*] Bevington pg 154 (8-30)  
Exact error in  $c(3) = 0.34207E-04$  [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) = 300. +/- 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 10:41 = 0.000E+00 km/sec  
The TOTAL velocity at 10:41 = 821. km/sec

The TANGENTIAL velocity at 10:47 = 0.000E+00 km/sec  
The TOTAL velocity at 10:47 = 763. km/sec

The TANGENTIAL velocity at 10:49 = 0.000E+00 km/sec  
The TOTAL velocity at 10:49 = 747. km/sec

The TANGENTIAL velocity at 11:36 = 0.000E+00 km/sec  
The TOTAL velocity at 11:36 = 313. km/sec

The TANGENTIAL velocity at 11:38 = 0.000E+00 km/sec  
The TOTAL velocity at 11:38 = 297. km/sec

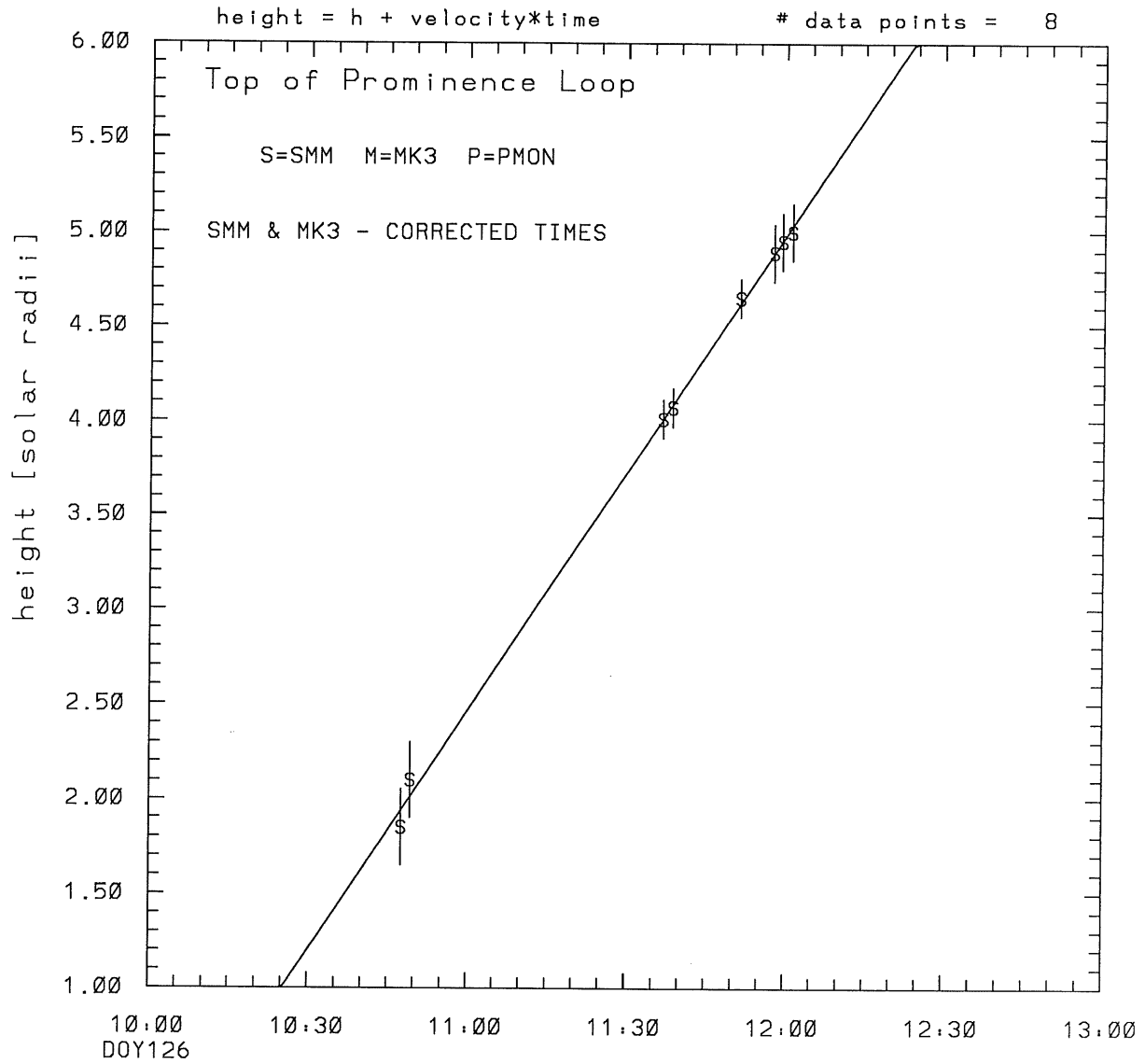
\*\*\*\*\*  
The following info is for estimating goodness of the fit  
\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 1.34  
Standard Deviation in start time measurement = 0.255E+02  
Value of reduced Chi Squared returned from nllst2 = 0.653E-03  
Reduced Chi Squared = 0.197E-02  
Chi Squared = 0.394E-02  
The probability for exceeding chi square = 0.999E+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 = 0.9143E+00  
The correlation between the data and the time\*\*2 term = 0.9284E+00  
The correlation between the data and the complete equation of motion = 0.9995E+00  
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

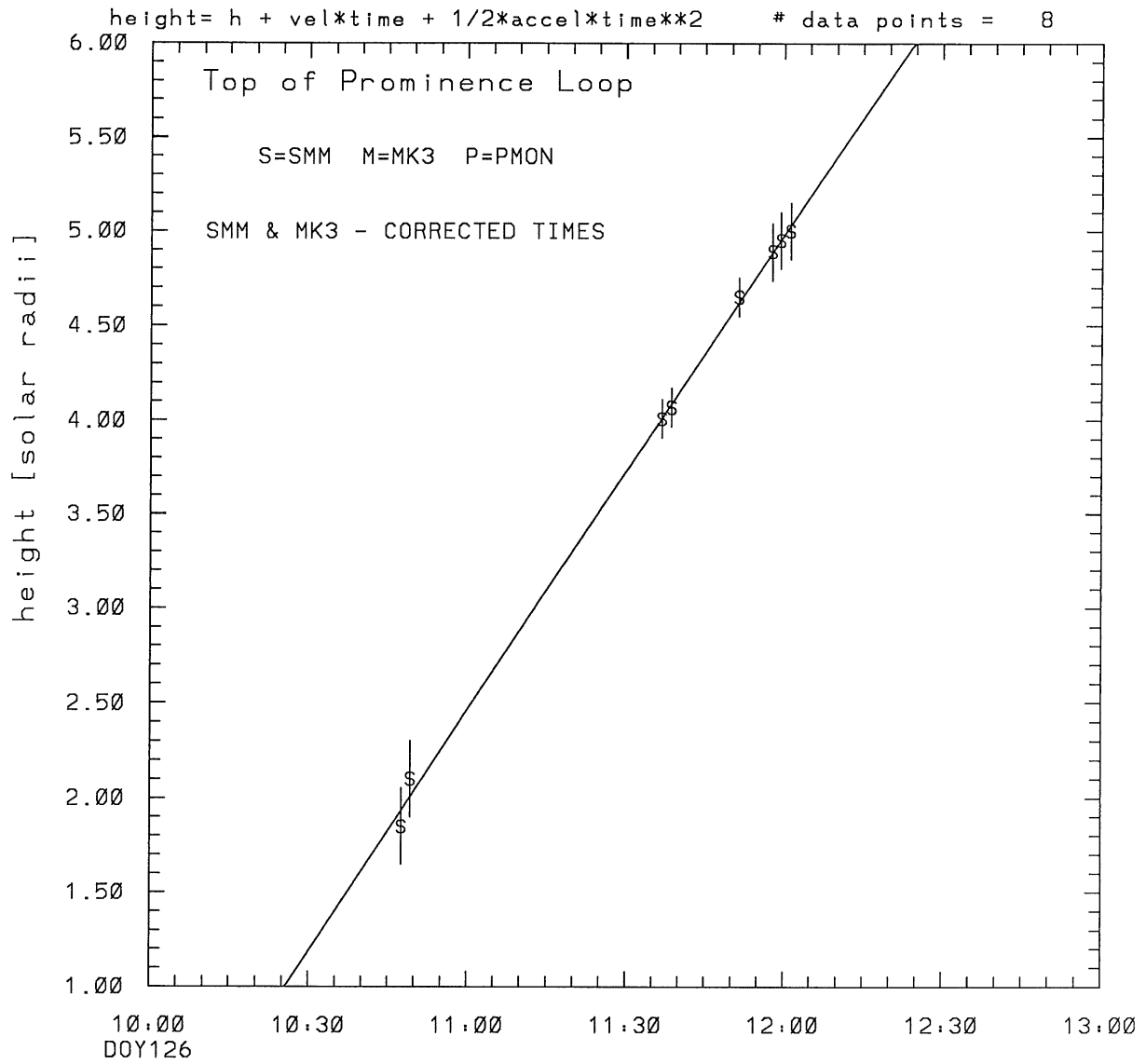
SMM C/P 1980 DOY126 295 +/- 0 degrees



tstart=DOY126 10:25 +/- 2.7 [min.]  
radial velocity= 487. +/- 7. [km/sec]



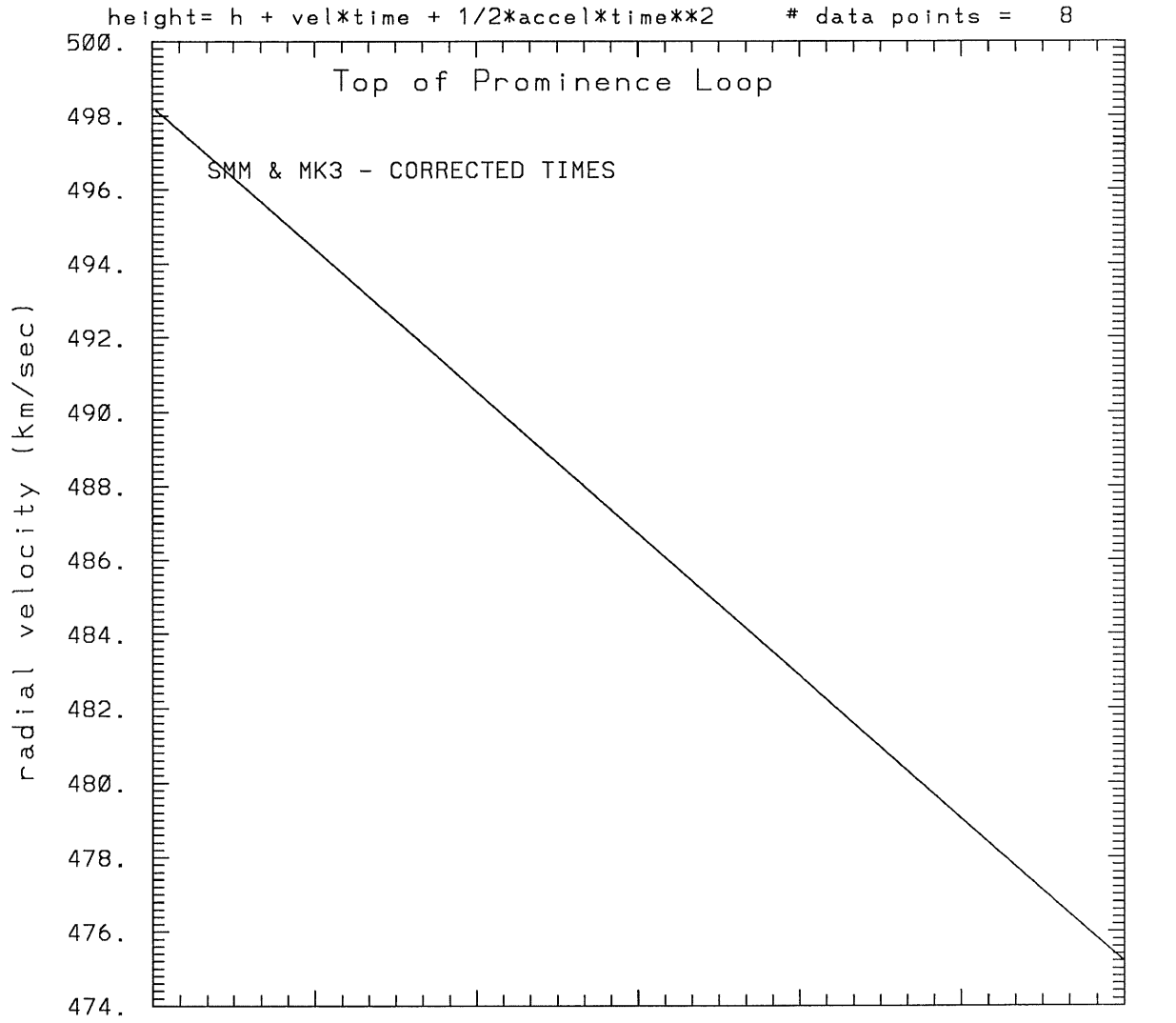
SMM C/P 1980 DOY126 295 +/- 0 degrees



tstart=DOY126 10:26 +/- 51.5 [min.]

radial acceleration =  $-0.0021 \pm 0.0110$  [km/sec\*\*2]

SMM C/P 1980 DOY126 295 +/- 0 degrees



DOY126

tstart=DOY126 10:26 +/- 51.5 [min.]

radial acceleration =  $-.213E-02$  km/sec\*\*2

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

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

year	doy	time	radii	radius	error in	angle	error in	angle	datatype
1980	126	10:47:34	1.85	+/- 0.20	295.0	+/- 0.5	SMM		
1980	126	10:49:17	2.10	+/- 0.20	295.0	+/- 0.5	SMM		
1980	126	11:36:49	4.01	+/- 0.10	295.0	+/- 1.0	SMM		
1980	126	11:38:40	4.07	+/- 0.10	295.0	+/- 1.0	SMM		
1980	126	11:51:27	4.65	+/- 0.10	295.0	+/- 1.0	SMM		
1980	126	11:57:48	4.89	+/- 0.15	295.0	+/- 1.0	SMM		
1980	126	11:59:23	4.95	+/- 0.15	295.0	+/- 1.0	SMM		
1980	126	12: 1:13	5.00	+/- 0.15	295.0	+/- 1.0	SMM		

\*\*\*\*\*  
Structure being measured:  
Top of Prominence Loop  
\*\*\*\*\*

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

START TIME:

Event began at  $t = 0 + 0.252E+02 \pm 0.272E+01$  [minutes]  
In more convenient units:  
Event began at DOY 126 10:25  $\pm 0.272E+01$  [minutes]

Origin defined at DOY126 10: 0

RADIAL INFORMATION:

RADIAL VELOCITY =  $487. \pm 7$  km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = -0.607E-01 \pm 0.650E-01$  [solar radii]  
 $c(2) = 0.420E-01 \pm 0.628E-03$  [radii/min]  
 $c(2) = 0.487E+03 \pm 0.729E+01$  [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  $c(1) = 0.67743E-01$  [radii] see Bevington pg. 114  
error in  $c(2) = 0.68151E-03$  [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) = 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 10:47 = 0.000E+00 km/sec

The TOTAL velocity at 10:47 = 487. km/sec

The TANGENTIAL velocity at 10:49 = 0.000E+00 km/sec

The TOTAL velocity at 10:49 = 487. km/sec

The TANGENTIAL velocity at 11:36 = 0.000E+00 km/sec

The TOTAL velocity at 11:36 = 487. km/sec

The TANGENTIAL velocity at 11:38 = 0.000E+00 km/sec

The TOTAL velocity at 11:38 = 487. km/sec

The TANGENTIAL velocity at 11:51 = 0.000E+00 km/sec

The TOTAL velocity at 11:51 = 487. km/sec

The TANGENTIAL velocity at 11:57 = 0.000E+00 km/sec

The TOTAL velocity at 11:57 = 487. km/sec

The TANGENTIAL velocity at 11:59 = 0.000E+00 km/sec

The TOTAL velocity at 11:59 = 487. km/sec

The TANGENTIAL velocity at 12: 1 = 0.000E+00 km/sec

The TOTAL velocity at 12: 1 = 487. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 1.27

Standard Deviation in start time measurement = 0.283E+02

Error in time = 0.31855E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.129E-02

Reduced Chi Squared = 0.623E-02

Chi Squared = 0.374E-01

The probability for exceeding chi square = 0.100E+01

The correlation coefficient =  $0.999\text{E}+00$

The probability that no LINEAR correlation exists between the variables =  $-0.7490\text{E}-07$

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
1980	126	10:47:34	1.85	+/- 0.20	295.0	+/- 0.5	SMM
1980	126	10:49:17	2.10	+/- 0.20	295.0	+/- 0.5	SMM
1980	126	11:36:49	4.01	+/- 0.10	295.0	+/- 1.0	SMM
1980	126	11:38:40	4.07	+/- 0.10	295.0	+/- 1.0	SMM
1980	126	11:51:27	4.65	+/- 0.10	295.0	+/- 1.0	SMM
1980	126	11:57:48	4.89	+/- 0.15	295.0	+/- 1.0	SMM
1980	126	11:59:23	4.95	+/- 0.15	295.0	+/- 1.0	SMM
1980	126	12: 1:13	5.00	+/- 0.15	295.0	+/- 1.0	SMM

\*\*\*\*\*  
Structure being measured:  
Top of Prominence Loop  
\*\*\*\*\*

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

START TIME:

Event began at  $t = 0 + 0.256E+02 \pm 0.515E+02$  [minutes]  
In more convenient units:  
Event began at DOY 126 10:26  $\pm 0.515E+02$  [minutes]

Origin defined at DOY126 10: 0

RADIAL INFORMATION:

RADIAL ACCELERATION =  $-0.213E-02 \pm 0.110E-01$  km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = -0.965E-01 \pm 0.198E+00$  [solar radii]  
 $c(2) = 0.430E-01 \pm 0.487E-02$  [radii/min]  
 $c(2) = 0.498E+03 \pm 0.565E+02$  [km/sec]  
 $c(3) = -0.552E-05 \pm 0.285E-04$  [radii/min\*\*2]  
 $c(3) = -0.213E-02 \pm 0.110E-01$  [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in  $c(1) = 0.28092E+00$  [radii] Bevington pg 154 (8-30)  
Exact error in  $c(1) = 0.10643E+00$  [radii] Bevington pg 154 (8-28)  
Approximate error in  $c(2) = 0.76283E-02$  [radii/min] Bevington pg 154 (8-30)

Exact error in c(2) = 0.19965E-02 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.45773E-04 [radii/min\*\*] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.92710E-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 10:47 = 0.000E+00 km/sec

The TOTAL velocity at 10:47 = 492. km/sec

The TANGENTIAL velocity at 10:49 = 0.000E+00 km/sec

The TOTAL velocity at 10:49 = 492. km/sec

The TANGENTIAL velocity at 11:36 = 0.000E+00 km/sec

The TOTAL velocity at 11:36 = 486. km/sec

The TANGENTIAL velocity at 11:38 = 0.000E+00 km/sec

The TOTAL velocity at 11:38 = 486. km/sec

The TANGENTIAL velocity at 11:51 = 0.000E+00 km/sec

The TOTAL velocity at 11:51 = 484. km/sec

The TANGENTIAL velocity at 11:57 = 0.000E+00 km/sec

The TOTAL velocity at 11:57 = 483. km/sec

The TANGENTIAL velocity at 11:59 = 0.000E+00 km/sec

The TOTAL velocity at 11:59 = 483. km/sec

The TANGENTIAL velocity at 12: 1 = 0.000E+00 km/sec

The TOTAL velocity at 12: 1 = 483. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 1.27

Standard Deviation in start time measurement = 0.283E+02

Value of reduced Chi Squared returned from nllst2 = 0.149E-02

Reduced Chi Squared = 0.728E-02

Chi Squared = 0.364E-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 = 0.7446E+00

The correlation between the data and the time\*\*2 term = 0.7428E+00

The correlation between the data and the complete equation of motion = 0.9982E+00

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