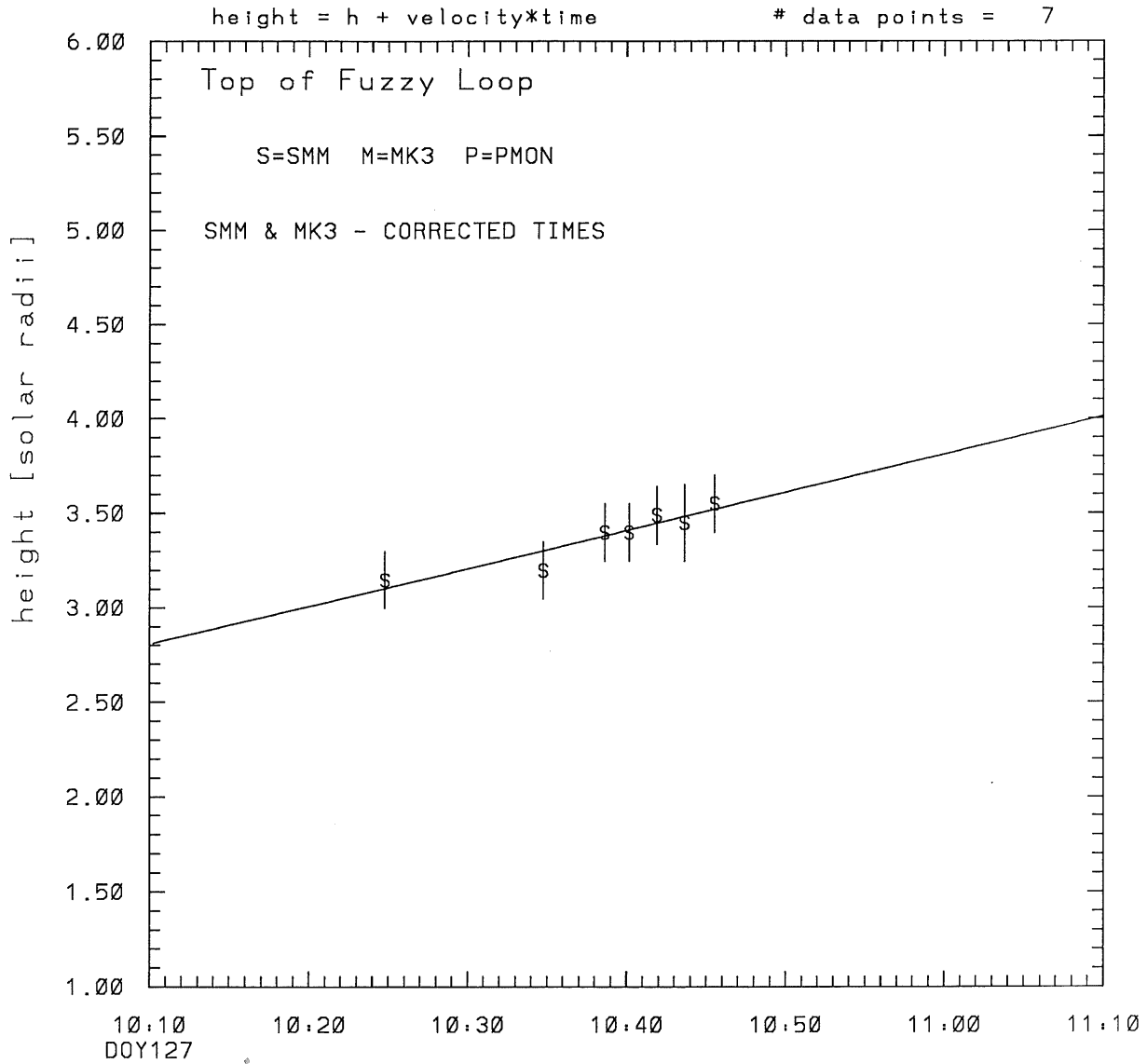
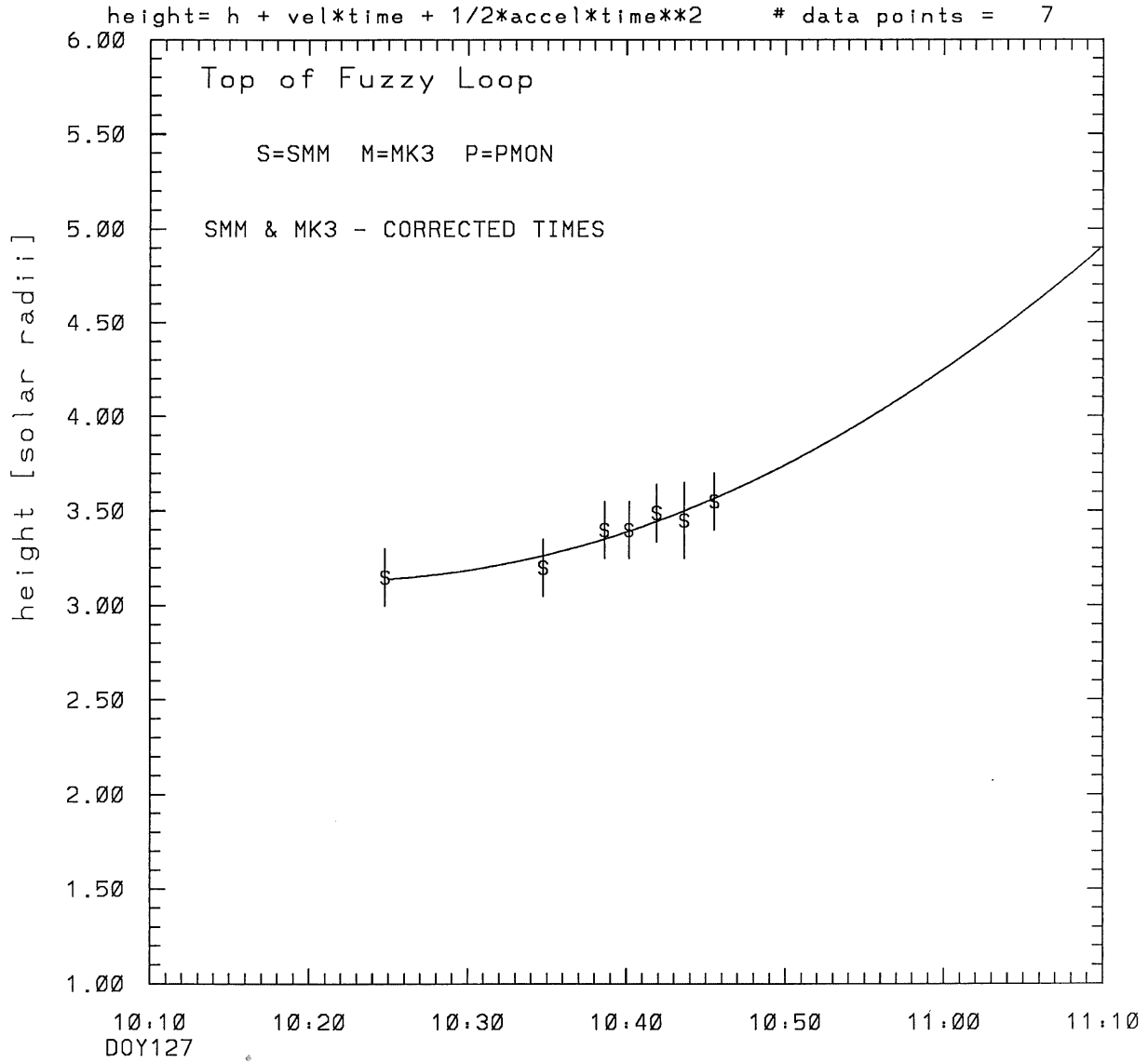


SMM C/P 1980 DOY127 275 +/- 0 degrees



tstart=DOY127 8:40 +/- 5.0 [min.]  
radial velocity= 233. +/- 37. [km/sec]

SMM C/P 1980 DOY127 275 +/- 0 degrees

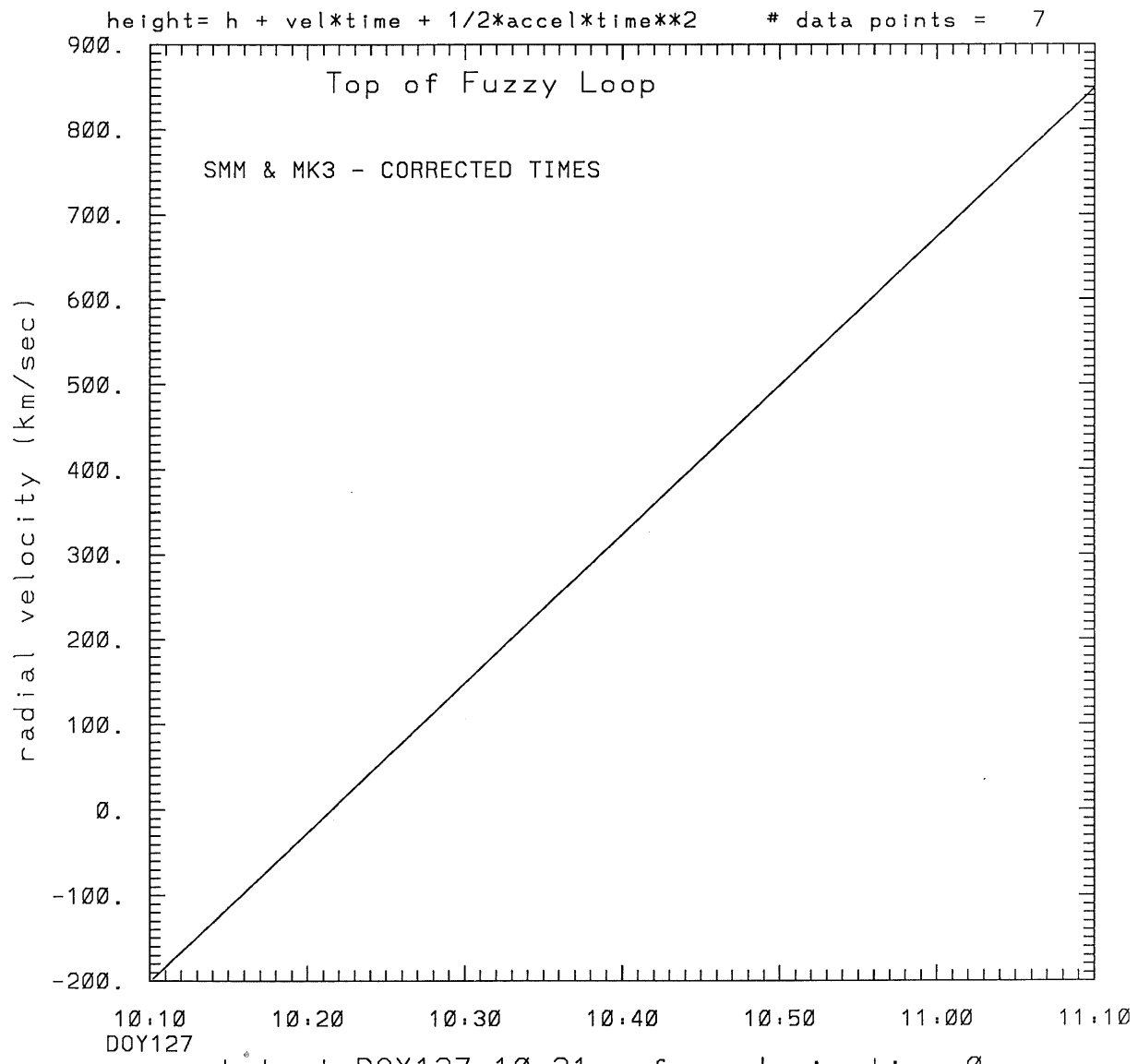


tstart=DOY127 10:21 from derivative=0

Event begins at 3.13 Solar Radii

radial acceleration = 0.2917 +/- 0.1642 [km/sec\*\*2]

SMM C/P 1980 DOY127 275 +/- 0 degrees



tstart=DOY127 10:21 from derivative=0  
Event begins at 3.13 Solar Radii  
radial acceleration=0.292E+00 km/sec\*\*2

\*\*\*\*\*

This is a 1 order run

\*\*\*\*\*

\*\*\*\*\*

INPUT:

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year	doy	time	radii	radius	error in	angle	error in	angle	datatype
1980	127	10:24:47	3.15	+/- 0.15	275.0	+/- 1.0	SMM		
1980	127	10:34:45	3.20	+/- 0.15	275.0	+/- 1.0	SMM		
1980	127	10:38:37	3.40	+/- 0.15	275.0	+/- 1.0	SMM		
1980	127	10:40: 9	3.40	+/- 0.15	275.0	+/- 1.0	SMM		
1980	127	10:41:54	3.49	+/- 0.15	275.0	+/- 1.0	SMM		
1980	127	10:43:38	3.45	+/- 0.20	275.0	+/- 1.0	SMM		
1980	127	10:45:32	3.55	+/- 0.15	275.0	+/- 1.0	SMM		

\*\*\*\*\*

Structure being measured:

Top of Fuzzy Loop

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OUTPUT:

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START TIME:

Event began at t = 0 + -0.901E+02 +/- 0.499E+01 [minutes]

In more convenient units:

Event began at DOY 127 8:40 +/- 0.499E+01 [minutes]

Origin defined at DOY127 10:10

RADIAL INFORMATION:

RADIAL VELOCITY = 233. +/- 37. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.281E+01 +/- 0.911E-01 [solar radii]  
 c(2) = 0.201E-01 +/- 0.315E-02 [radii/min]  
 c(2) = 0.233E+03 +/- 0.366E+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)= 0.10006E+00 [radii] see Bevington pg. 114

error in c(2)= 0.34263E-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) = 275. +/- 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 10:24 = 0.000E+00 km/sec

The TOTAL velocity at 10:24 = 233. km/sec

The TANGENTIAL velocity at 10:34 = 0.000E+00 km/sec

The TOTAL velocity at 10:34 = 233. km/sec

The TANGENTIAL velocity at 10:38 = 0.000E+00 km/sec

The TOTAL velocity at 10:38 = 233. km/sec

The TANGENTIAL velocity at 10:40 = 0.000E+00 km/sec

The TOTAL velocity at 10:40 = 233. km/sec

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

The TOTAL velocity at 10:41 = 233. km/sec

The TANGENTIAL velocity at 10:43 = 0.000E+00 km/sec

The TOTAL velocity at 10:43 = 233. km/sec

The TANGENTIAL velocity at 10:45 = 0.000E+00 km/sec

The TOTAL velocity at 10:45 = 233. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.15

Standard Deviation in start time measurement = 0.646E+01

Error in time = 0.65262E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.297E-02

Reduced Chi Squared = 0.935E-02

Chi Squared = 0.467E-01

The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.933E+00

The probability that no LINEAR correlation exists between the variables = 0.2163E-02

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

\*\*\*\*\*

This is a 2 order run

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\*\*\*\*\*

INPUT:

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year	doy	time	radii	radius	error in	angle	error in	angle	datatype
1980	127	10:24:47	3.15	+/- 0.15	275.0	+/- 1.0	SMM		
1980	127	10:34:45	3.20	+/- 0.15	275.0	+/- 1.0	SMM		
1980	127	10:38:37	3.40	+/- 0.15	275.0	+/- 1.0	SMM		
1980	127	10:40: 9	3.40	+/- 0.15	275.0	+/- 1.0	SMM		
1980	127	10:41:54	3.49	+/- 0.15	275.0	+/- 1.0	SMM		
1980	127	10:43:38	3.45	+/- 0.20	275.0	+/- 1.0	SMM		
1980	127	10:45:32	3.55	+/- 0.15	275.0	+/- 1.0	SMM		

\*\*\*\*\*

Structure being measured:

Top of Fuzzy Loop

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\*\*\*\*\*

OUTPUT:

\*\*\*\*\*

START TIME:

tstart=DOY127 10:21 from derivative = 0

Event begins at 3.13 Solar Radii

Origin defined at DOY127 10:10

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.292E+00 +/- 0.164E+00 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

- c(1) = 0.323E+01 +/- 0.251E+00 [solar radii]
- c(2) = -0.174E-01 +/- 0.213E-01 [radii/min]
- c(2) = -0.201E+03 +/- 0.247E+03 [km/sec]
- c(3) = 0.754E-03 +/- 0.425E-03 [radii/min\*\*2]
- c(3) = 0.292E+00 +/- 0.164E+00 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

- Approximate error in c(1) = 0.29476E+00 [radii] Bevington pg 154 (8-30)
- Exact error in c(1) = 0.41888E-01 [radii] Bevington pg 154 (8-28)
- Approximate error in c(2) = 0.24878E-01 [radii/min] Bevington pg 154 (8-30)
- Exact error in c(2) = 0.39344E-02 [radii/min] Bevington pg 154 (8-28)
- Approximate error in c(3) = 0.49549E-03 [radii/min\*\*] Bevington pg 154 (8-30)
- Exact error in c(3) = 0.83704E-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) = 275. +/- 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 10:24 = 0.000E+00 km/sec

The TOTAL velocity at 10:24 = 57. km/sec

The TANGENTIAL velocity at 10:34 = 0.000E+00 km/sec

The TOTAL velocity at 10:34 = 232. km/sec

The TANGENTIAL velocity at 10:38 = 0.000E+00 km/sec

The TOTAL velocity at 10:38 = 299. km/sec

The TANGENTIAL velocity at 10:40 = 0.000E+00 km/sec

The TOTAL velocity at 10:40 = 326. km/sec

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

The TOTAL velocity at 10:41 = 357. km/sec

The TANGENTIAL velocity at 10:43 = 0.000E+00 km/sec

The TOTAL velocity at 10:43 = 387. km/sec

The TANGENTIAL velocity at 10:45 = 0.000E+00 km/sec

The TOTAL velocity at 10:45 = 420. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.15

Standard Deviation in start time measurement = 0.646E+01

Value of reduced Chi Squared returned from nllst2 = 0.218E-02

Reduced Chi Squared = 0.107E-01

Chi Squared = 0.427E-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 = 0.9445E+00

The correlation between the data and the time\*\*2 term = 0.9624E+00

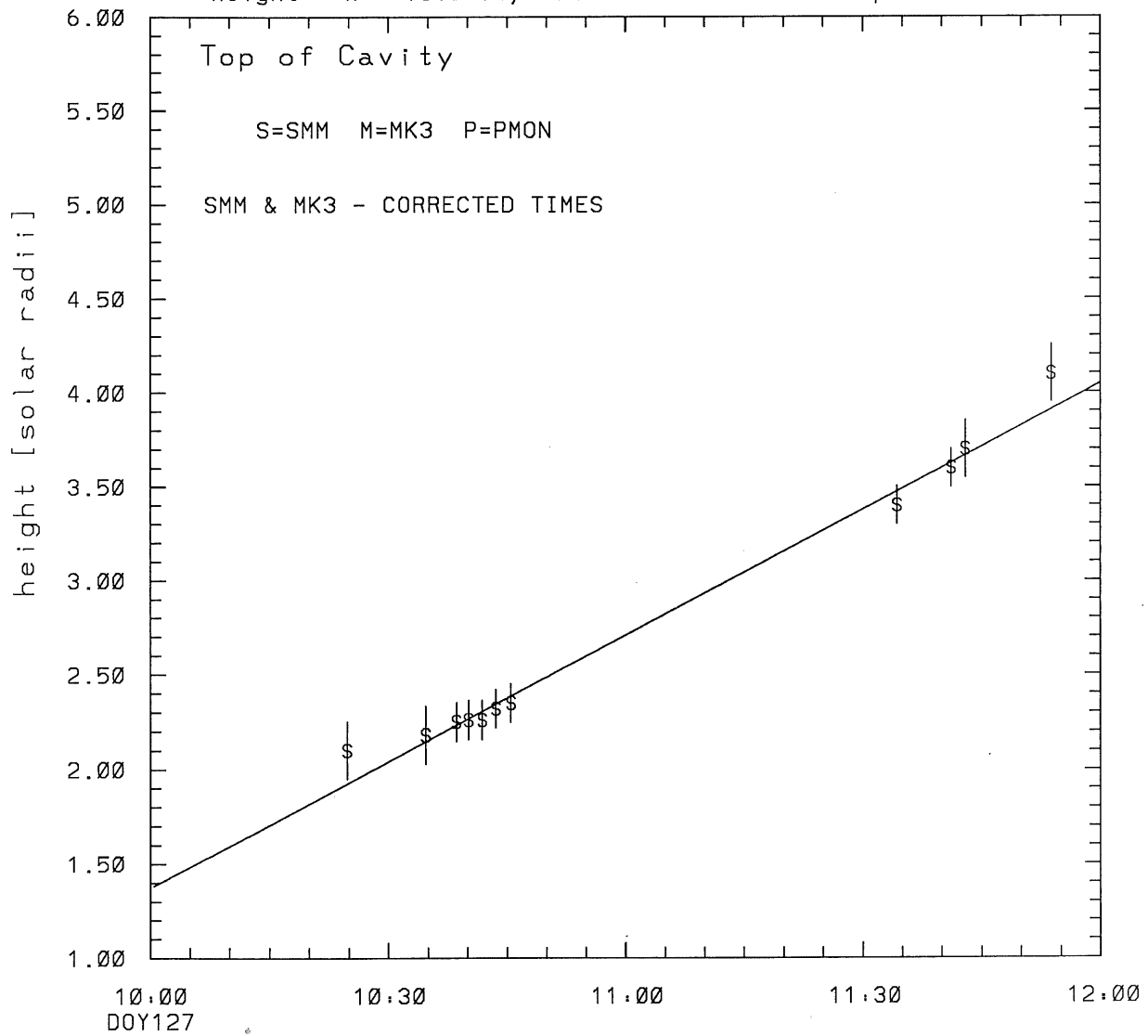
The correlation between the data and the complete equation of motion = 0.9218E+00  
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]



SMM C/P 1980 DOY127 275 +/- 0 degrees

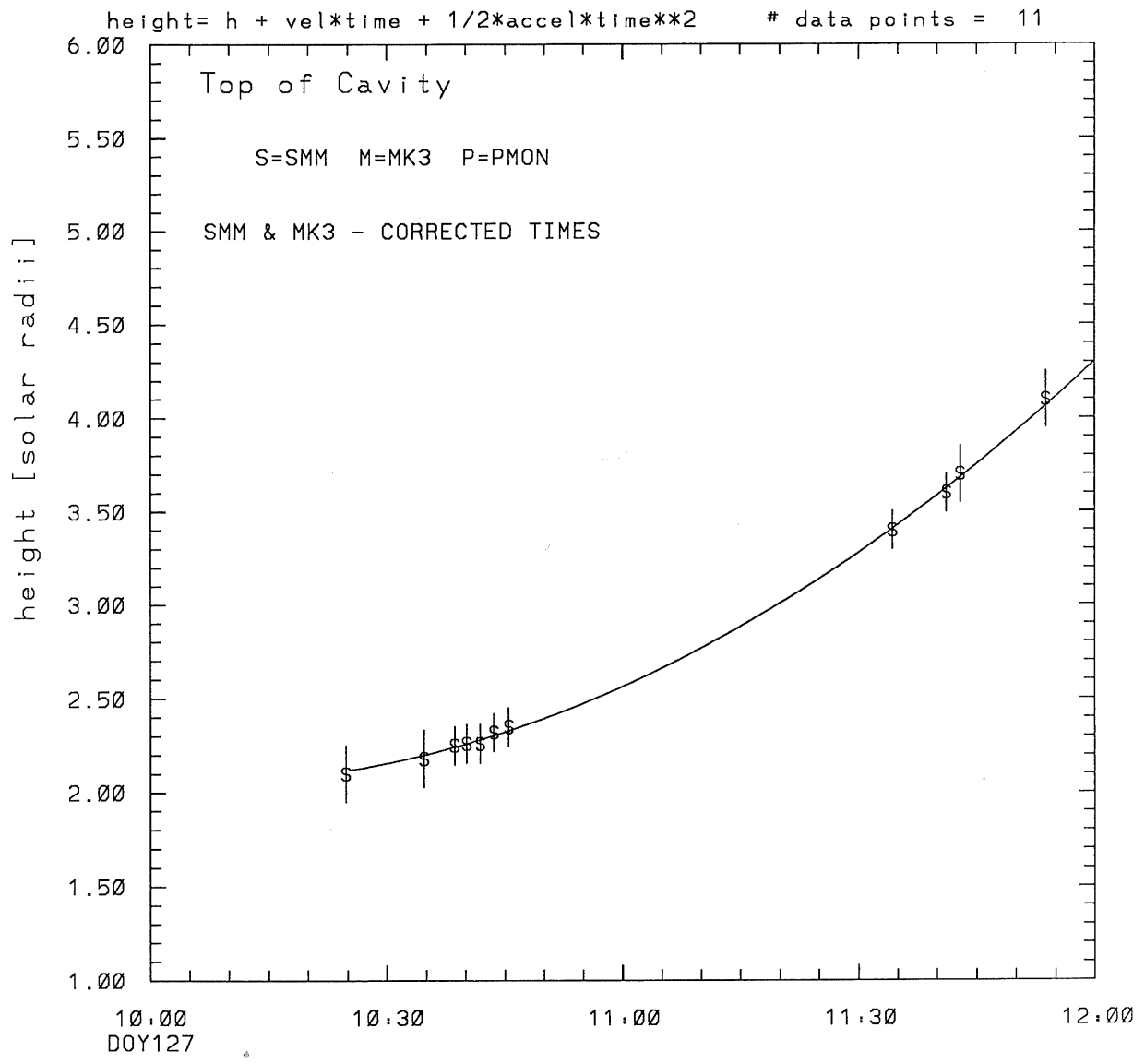
height = h + velocity\*time

# data points = 11



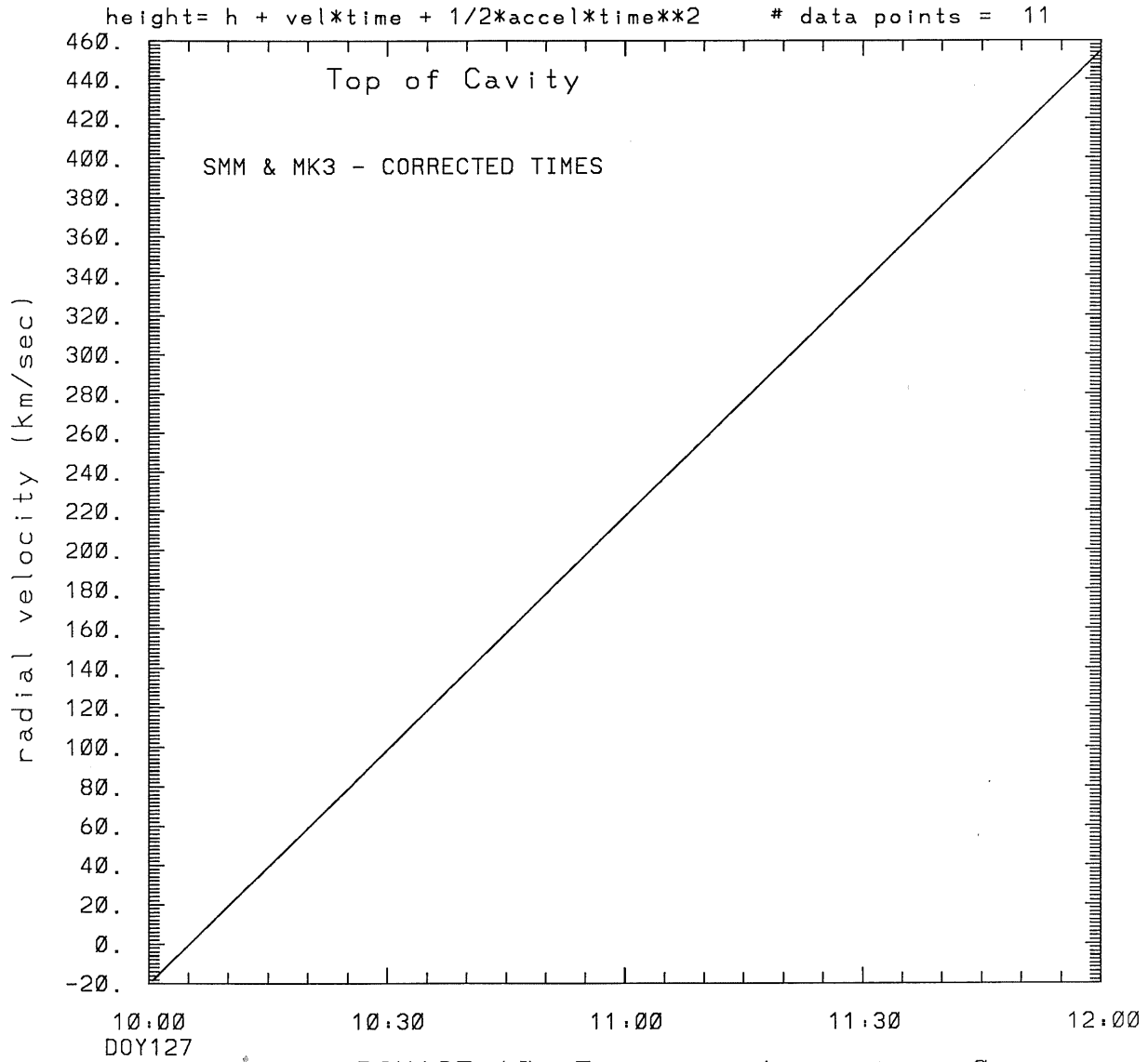
tstart=DOY127 9:45 +/- 0.1 [min.]  
radial velocity= 258. +/- 9. [km/sec]

SMM C/P 1980 DOY127 275 +/- 0 degrees



tstart=DOY127 10: 5 from derivative=0  
Event begins at 2.05 Solar Radii  
radial acceleration= 0.0660 +/- 0.0060 [km/sec\*\*2]

SMM C/P 1980 DOY127 275 +/- 0 degrees



t\*start=DOY127 10: 5 from derivative=0  
Event begins at 2.05 Solar Radii  
radial acceleration= $0.660E-01$  km/sec\*\*2

\*\*\*\*\*

This is a 1 order run

\*\*\*\*\*

\*\*\*\*\*

INPUT:

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year	doy	time	radii	error in radius	angle	error in angle	datatype
1980	127	10:24:47	2.10	+/- 0.15	275.0	+/- 0.5	SMM
1980	127	10:34:45	2.18	+/- 0.15	275.0	+/- 0.5	SMM
1980	127	10:38:37	2.25	+/- 0.10	275.0	+/- 0.5	SMM
1980	127	10:40: 9	2.26	+/- 0.10	275.0	+/- 0.5	SMM
1980	127	10:41:54	2.26	+/- 0.10	275.0	+/- 0.5	SMM
1980	127	10:43:38	2.32	+/- 0.10	275.0	+/- 0.5	SMM
1980	127	10:45:32	2.35	+/- 0.10	275.0	+/- 0.5	SMM
1980	127	11:34:20	3.40	+/- 0.10	275.0	+/- 1.0	SMM
1980	127	11:41:12	3.60	+/- 0.10	275.0	+/- 1.0	SMM
1980	127	11:42:57	3.70	+/- 0.15	275.0	+/- 1.0	SMM
1980	127	11:53:47	4.10	+/- 0.15	275.0	+/- 1.0	SMM

\*\*\*\*\*

Structure being measured:

Top of Cavity

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OUTPUT:

\*\*\*\*\*

START TIME:

Event began at  $t = 0 + -0.167E+02 +/- 0.107E+00$  [minutes]

In more convenient units:

Event began at DOY 127 9:45 +/- 0.107E+00 [minutes]

Origin defined at DOY127 10: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 258. +/- 9. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.137E+01 +/- 0.500E-01 [solar radii]  
c(2) = 0.223E-01 +/- 0.748E-03 [radii/min]  
c(2) = 0.258E+03 +/- 0.868E+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)= 0.62698E-01 [radii] see Bevington pg. 114  
error in c(2)= 0.90034E-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) = 275. +/- 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 10:24 = 0.000E+00 km/sec

The TOTAL velocity at 10:24 = 258. km/sec

The TANGENTIAL velocity at 10:34 = 0.000E+00 km/sec

The TOTAL velocity at 10:34 = 258. km/sec

The TANGENTIAL velocity at 10:38 = 0.000E+00 km/sec

The TOTAL velocity at 10:38 = 258. km/sec

The TANGENTIAL velocity at 10:40 = 0.000E+00 km/sec

The TOTAL velocity at 10:40 = 258. km/sec

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

The TOTAL velocity at 10:41 = 258. km/sec

The TANGENTIAL velocity at 10:43 = 0.000E+00 km/sec

The TOTAL velocity at 10:43 = 258. km/sec

The TANGENTIAL velocity at 10:45 = 0.000E+00 km/sec

The TOTAL velocity at 10:45 = 258. km/sec

The TANGENTIAL velocity at 11:34 = 0.000E+00 km/sec

The TOTAL velocity at 11:34 = 258. km/sec

The TANGENTIAL velocity at 11:41 = 0.000E+00 km/sec

The TOTAL velocity at 11:41 = 258. km/sec

The TANGENTIAL velocity at 11:42 = 0.000E+00 km/sec

The TOTAL velocity at 11:42 = 258. km/sec

The TANGENTIAL velocity at 11:53 = 0.000E+00 km/sec

The TOTAL velocity at 11:53 = 258. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.75

Standard Deviation in start time measurement = 0.318E+02

Error in time = 0.12775E+02 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.524E-02

Reduced Chi Squared = 0.588E-01

Chi Squared = 0.529E+00

The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.993E+00

The probability that no LINEAR correlation exists between the variables = 0.8706E-09

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

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

year	doy	time	radii	error in radius	angle	error in angle	datatype
1980	127	10:24:47	2.10	+/- 0.15	275.0	+/- 0.5	SMM
1980	127	10:34:45	2.18	+/- 0.15	275.0	+/- 0.5	SMM
1980	127	10:38:37	2.25	+/- 0.10	275.0	+/- 0.5	SMM
1980	127	10:40: 9	2.26	+/- 0.10	275.0	+/- 0.5	SMM
1980	127	10:41:54	2.26	+/- 0.10	275.0	+/- 0.5	SMM
1980	127	10:43:38	2.32	+/- 0.10	275.0	+/- 0.5	SMM
1980	127	10:45:32	2.35	+/- 0.10	275.0	+/- 0.5	SMM
1980	127	11:34:20	3.40	+/- 0.10	275.0	+/- 1.0	SMM
1980	127	11:41:12	3.60	+/- 0.10	275.0	+/- 1.0	SMM
1980	127	11:42:57	3.70	+/- 0.15	275.0	+/- 1.0	SMM
1980	127	11:53:47	4.10	+/- 0.15	275.0	+/- 1.0	SMM

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

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

START TIME:

tstart=DOY127 10: 5 from derivative = 0  
Event begins at 2.05 Solar Radii  
Origin defined at DOY127 10: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.660E-01 +/- 0.602E-02 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.206E+01 +/- 0.639E-01 [solar radii]  
c(2) = -0.176E-02 +/- 0.220E-02 [radii/min]  
c(2) = -0.204E+02 +/- 0.255E+02 [km/sec]  
c(3) = 0.171E-03 +/- 0.156E-04 [radii/min\*\*2]  
c(3) = 0.660E-01 +/- 0.602E-02 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.59085E-01 [radii] Bevington pg 154 (8-30)  
Exact error in c(1) = 0.16026E-01 [radii] Bevington pg 154 (8-28)

Approximate error in c(2) = 0.20842E-02 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.56362E-03 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.14707E-04 [radii/min\*\*] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.41112E-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) = 275. +/- 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 10:24 = 0.000E+00 km/sec  
The TOTAL velocity at 10:24 = 78. km/sec

The TANGENTIAL velocity at 10:34 = 0.000E+00 km/sec  
The TOTAL velocity at 10:34 = 117. km/sec

The TANGENTIAL velocity at 10:38 = 0.000E+00 km/sec  
The TOTAL velocity at 10:38 = 132. km/sec

The TANGENTIAL velocity at 10:40 = 0.000E+00 km/sec  
The TOTAL velocity at 10:40 = 139. km/sec

The TANGENTIAL velocity at 10:41 = 0.000E+00 km/sec  
The TOTAL velocity at 10:41 = 145. km/sec

The TANGENTIAL velocity at 10:43 = 0.000E+00 km/sec  
The TOTAL velocity at 10:43 = 152. km/sec

The TANGENTIAL velocity at 10:45 = 0.000E+00 km/sec  
The TOTAL velocity at 10:45 = 160. km/sec

The TANGENTIAL velocity at 11:34 = 0.000E+00 km/sec  
The TOTAL velocity at 11:34 = 353. km/sec

The TANGENTIAL velocity at 11:41 = 0.000E+00 km/sec  
The TOTAL velocity at 11:41 = 380. km/sec

The TANGENTIAL velocity at 11:42 = 0.000E+00 km/sec  
The TOTAL velocity at 11:42 = 387. km/sec

The TANGENTIAL velocity at 11:53 = 0.000E+00 km/sec  
The TOTAL velocity at 11:53 = 430. km/sec



\*\*\*\*\*  
The following info is for estimating goodness of the fit  
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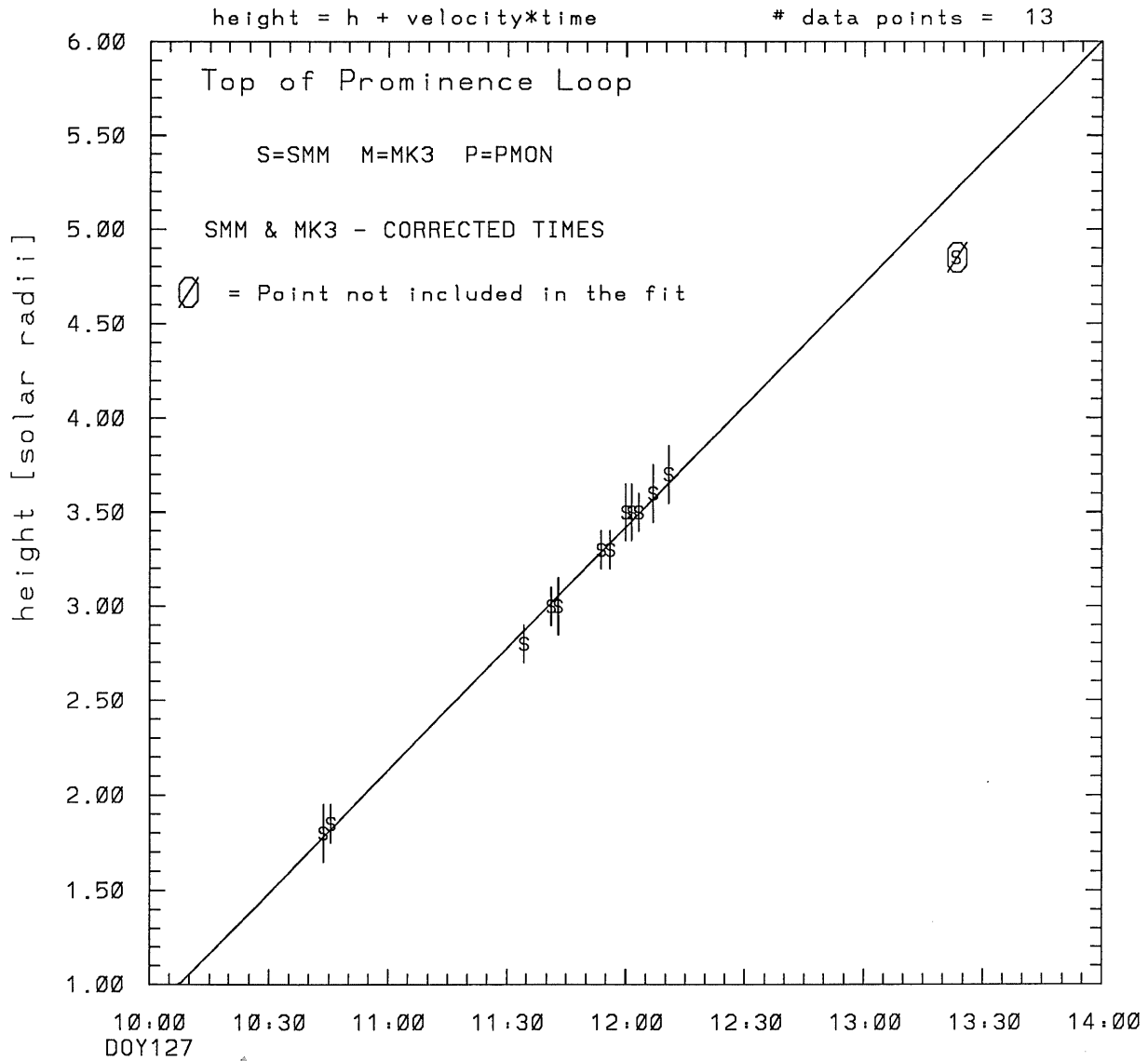
Fit is ok [ier=1]

Standard Deviation in the height = 0.75  
Standard Deviation in start time measurement = 0.318E+02  
Value of reduced Chi Squared returned from nllst2 = 0.405E-03  
Reduced Chi Squared = 0.392E-02  
Chi Squared = 0.314E-01  
The probability for exceeding chi square = 0.100E+01

For a second order fit 3 correlation coefficients are given:

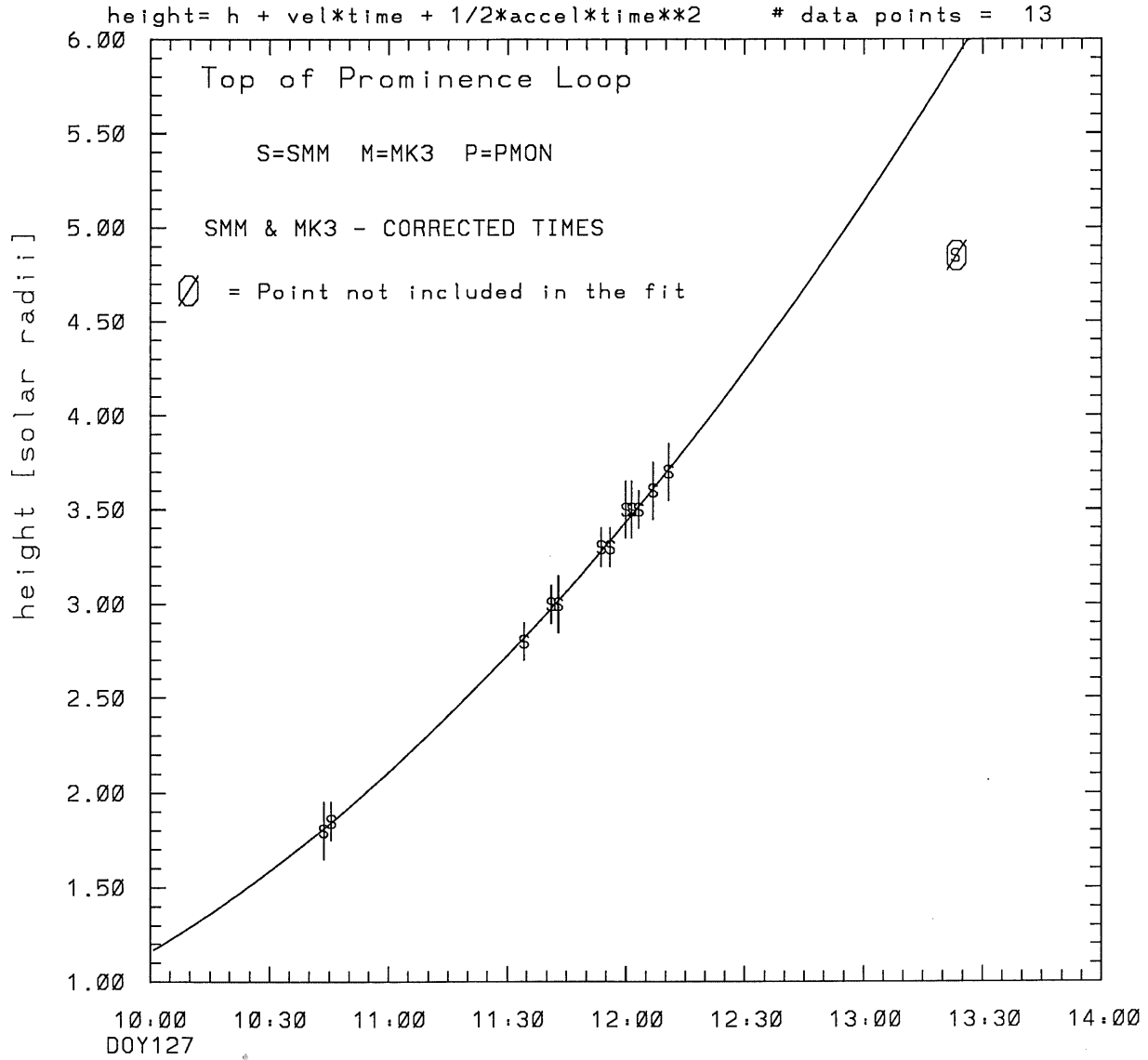
(Using equation of motion:  $r = a + bt + at^{**2}$ )  
The correlation between the data and the term linear in time = 0.9144E+00  
The correlation between the data and the time\*\*2 term = 0.9204E+00  
The correlation between the data and the complete equation of motion = 0.9991E+00  
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

SMM C/P 1980 DOY127 282 +/- 0 degrees



tstart=DOY127 10: 7 +/- 0.1 [min.]  
radial velocity= 250. +/- 5. [km/sec]

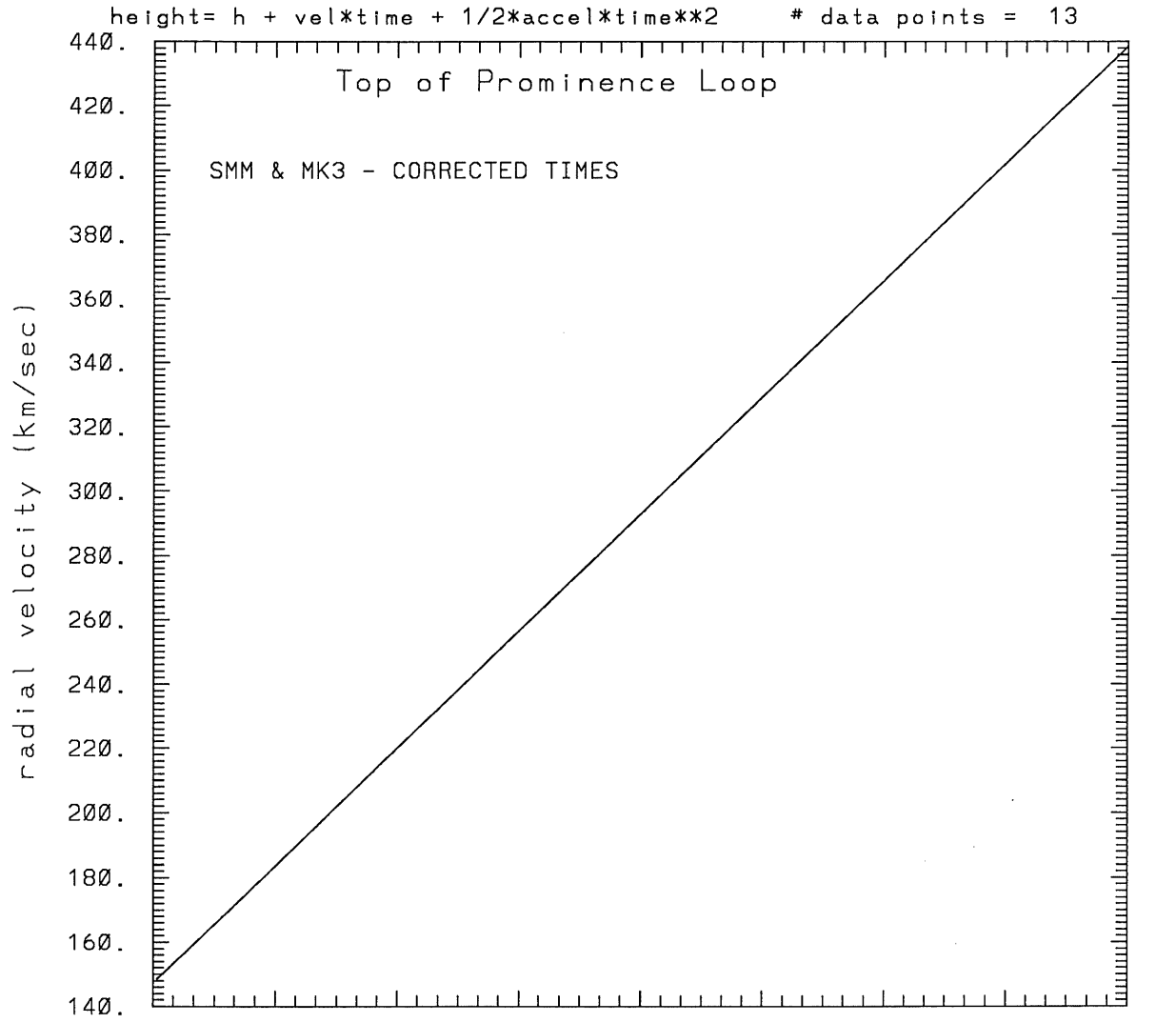
SMM C/P 1980 DOY127 282 +/- 0 degrees



tstart=DOY127 9:47 +/- 0.7 [min.]

radial acceleration = 0.0202 +/- 0.0049 [km/sec\*\*2]

SMM C/P 1980 DOY127 282 +/- 0 degrees



10:00  
DOY127

t\*start=DOY127 9:47 +/- 0.7 [min.]

radial acceleration =  $0.202E-01$  km/sec\*\*2

\*\*\*\*\*

This is a 1 order run

\*\*\*\*\*

\*\*\*\*\*

INPUT:

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year	day	time	error in radii	error in radius	error in angle	error in angle	datatype
1980	127	10:43:38	1.80 +/- 0.15	1.80 +/- 0.15	282.0 +/- 0.5	282.0 +/- 0.5	SMM
1980	127	10:45:32	1.85 +/- 0.10	1.85 +/- 0.10	282.0 +/- 0.5	282.0 +/- 0.5	SMM
1980	127	11:34:20	2.80 +/- 0.10	2.80 +/- 0.10	282.0 +/- 0.5	282.0 +/- 0.5	SMM
1980	127	11:41:12	3.00 +/- 0.10	3.00 +/- 0.10	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	11:42:57	3.00 +/- 0.15	3.00 +/- 0.15	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	11:53:47	3.30 +/- 0.10	3.30 +/- 0.10	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	11:56: 5	3.30 +/- 0.10	3.30 +/- 0.10	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	11:59:58	3.50 +/- 0.15	3.50 +/- 0.15	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	12: 1:30	3.50 +/- 0.15	3.50 +/- 0.15	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	12: 3:14	3.50 +/- 0.10	3.50 +/- 0.10	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	12: 6:52	3.60 +/- 0.15	3.60 +/- 0.15	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	12:10:45	3.70 +/- 0.15	3.70 +/- 0.15	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	13:23:11	4.85	-----	282.00 +/-	----	SMM THIS POINT WASN'T USED IN THE FIT.

\*\*\*\*\*

Structure being measured:

Top of Prominence Loop

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OUTPUT:

\*\*\*\*\*

START TIME:

Event began at  $t = 0 + 0.744E+01 \pm 0.754E-01$  [minutes]

In more convenient units:

Event began at DOY 127 10: 7  $\pm 0.754E-01$  [minutes]

Origin defined at DOY127 10: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 250. +/- 5. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.840E+00 \pm 0.451E-01$  [solar radii]

$c(2) = 0.215E-01 \pm 0.428E-03$  [radii/min]

$c(2) = 0.250E+03 \pm 0.497E+01$  [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)= 0.10118E+00 [radii] see Bevington pg. 114

error in c(2)= 0.86238E-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) = 282. +/- 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 10:43 = 0.000E+00 km/sec

The TOTAL velocity at 10:43 = 250. km/sec

The TANGENTIAL velocity at 10:45 = 0.000E+00 km/sec

The TOTAL velocity at 10:45 = 250. km/sec

The TANGENTIAL velocity at 11:34 = 0.000E+00 km/sec

The TOTAL velocity at 11:34 = 250. km/sec

The TANGENTIAL velocity at 11:41 = 0.000E+00 km/sec

The TOTAL velocity at 11:41 = 250. km/sec

The TANGENTIAL velocity at 11:42 = 0.000E+00 km/sec

The TOTAL velocity at 11:42 = 250. km/sec

The TANGENTIAL velocity at 11:53 = 0.000E+00 km/sec

The TOTAL velocity at 11:53 = 250. km/sec

The TANGENTIAL velocity at 11:56 = 0.000E+00 km/sec

The TOTAL velocity at 11:56 = 250. km/sec

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

The TOTAL velocity at 11:59 = 250. km/sec

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

The TOTAL velocity at 12: 1 = 250. km/sec

The TANGENTIAL velocity at 12: 3 = 0.000E+00 km/sec

The TOTAL velocity at 12: 3 = 250. km/sec

The TANGENTIAL velocity at 12: 6 = 0.000E+00 km/sec

The TOTAL velocity at 12: 6 = 250. km/sec

The TANGENTIAL velocity at 12:10 = 0.000E+00 km/sec

The TOTAL velocity at 12:10 = 250. km/sec

The TANGENTIAL velocity at 13:23 = 0.000E+00 km/sec  
The TOTAL velocity at 13:23 = 250. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.79

Standard Deviation in start time measurement = 0.380E+02

Error in time = 0.18214E+02 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.179E-02

Reduced Chi Squared = 0.168E+00

Chi Squared = 0.185E+01

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 = -0.4272E-10

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
1980	127	10:43:38	1.80 +/- 0.15	1.80 +/- 0.15	282.0 +/- 0.5	282.0 +/- 0.5	SMM
1980	127	10:45:32	1.85 +/- 0.10	1.85 +/- 0.10	282.0 +/- 0.5	282.0 +/- 0.5	SMM
1980	127	11:34:20	2.80 +/- 0.10	2.80 +/- 0.10	282.0 +/- 0.5	282.0 +/- 0.5	SMM
1980	127	11:41:12	3.00 +/- 0.10	3.00 +/- 0.10	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	11:42:57	3.00 +/- 0.15	3.00 +/- 0.15	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	11:53:47	3.30 +/- 0.10	3.30 +/- 0.10	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	11:56: 5	3.30 +/- 0.10	3.30 +/- 0.10	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	11:59:58	3.50 +/- 0.15	3.50 +/- 0.15	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	12: 1:30	3.50 +/- 0.15	3.50 +/- 0.15	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	12: 3:14	3.50 +/- 0.10	3.50 +/- 0.10	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	12: 6:52	3.60 +/- 0.15	3.60 +/- 0.15	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	12:10:45	3.70 +/- 0.15	3.70 +/- 0.15	282.0 +/- 1.0	282.0 +/- 1.0	SMM
1980	127	13:23:11	4.85	-----	282.00 +/-	----	SMM THIS POINT WASN'T USED IN THE FIT.

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

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

START TIME:

Event began at  $t = 0 + -0.131E+02 +/- 0.745E+00$  [minutes]  
In more convenient units:  
Event began at DOY 127 9:47 +/- 0.745E+00 [minutes]

Origin defined at DOY127 10: 0

RADIAL INFORMATION:

RADIAL ACCELERATION =  $0.202E-01 +/- 0.487E-02$  km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) =  $0.116E+01 +/- 0.819E-01$  [solar radii]  
c(2) =  $0.127E-01 +/- 0.214E-02$  [radii/min]  
c(2) =  $0.147E+03 +/- 0.249E+02$  [km/sec]  
c(3) =  $0.523E-04 +/- 0.126E-04$  [radii/min\*\*2]  
c(3) =  $0.202E-01 +/- 0.487E-02$  [km/sec\*\*2]



The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in  $c(1) = 0.52646E+00$  [radii] Bevington pg 154 (8-30)  
Exact error in  $c(1) = 0.13960E-01$  [radii] Bevington pg 154 (8-28)  
Approximate error in  $c(2) = 0.88720E-02$  [radii/min] Bevington pg 154 (8-30)  
Exact error in  $c(2) = 0.40577E-03$  [radii/min] Bevington pg 154 (8-28)  
Approximate error in  $c(3) = 0.36630E-04$  [radii/min\*\*] Bevington pg 154 (8-30)  
Exact error in  $c(3) = 0.23787E-05$  [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:

$a(1) = 282.$  +/-  $0.$  [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 10:43 =  $0.000E+00$  km/sec  
The TOTAL velocity at 10:43 = 200. km/sec

The TANGENTIAL velocity at 10:45 =  $0.000E+00$  km/sec  
The TOTAL velocity at 10:45 = 202. km/sec

The TANGENTIAL velocity at 11:34 =  $0.000E+00$  km/sec  
The TOTAL velocity at 11:34 = 262. km/sec

The TANGENTIAL velocity at 11:41 =  $0.000E+00$  km/sec  
The TOTAL velocity at 11:41 = 270. km/sec

The TANGENTIAL velocity at 11:42 =  $0.000E+00$  km/sec  
The TOTAL velocity at 11:42 = 272. km/sec

The TANGENTIAL velocity at 11:53 =  $0.000E+00$  km/sec  
The TOTAL velocity at 11:53 = 285. km/sec

The TANGENTIAL velocity at 11:56 =  $0.000E+00$  km/sec  
The TOTAL velocity at 11:56 = 288. km/sec

The TANGENTIAL velocity at 11:59 =  $0.000E+00$  km/sec  
The TOTAL velocity at 11:59 = 293. km/sec

The TANGENTIAL velocity at 12: 1 =  $0.000E+00$  km/sec  
The TOTAL velocity at 12: 1 = 295. km/sec

The TANGENTIAL velocity at 12: 3 =  $0.000E+00$  km/sec  
The TOTAL velocity at 12: 3 = 297. km/sec

The TANGENTIAL velocity at 12: 6 = 0.000E+00 km/sec

The TOTAL velocity at 12: 6 = 301. km/sec

The TANGENTIAL velocity at 12:10 = 0.000E+00 km/sec

The TOTAL velocity at 12:10 = 306. km/sec

The TANGENTIAL velocity at 13:23 = 0.000E+00 km/sec

The TOTAL velocity at 13:23 = 394. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.79

Standard Deviation in start time measurement = 0.380E+02

Value of reduced Chi Squared returned from nllst2 = 0.761E-03

Reduced Chi Squared = 0.143E+01

Chi Squared = 0.143E+02

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 = 0.7595E+00

The correlation between the data and the time<sup>2</sup> term = 0.5674E+00

The correlation between the data and the complete equation of motion = 0.1035E+01

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