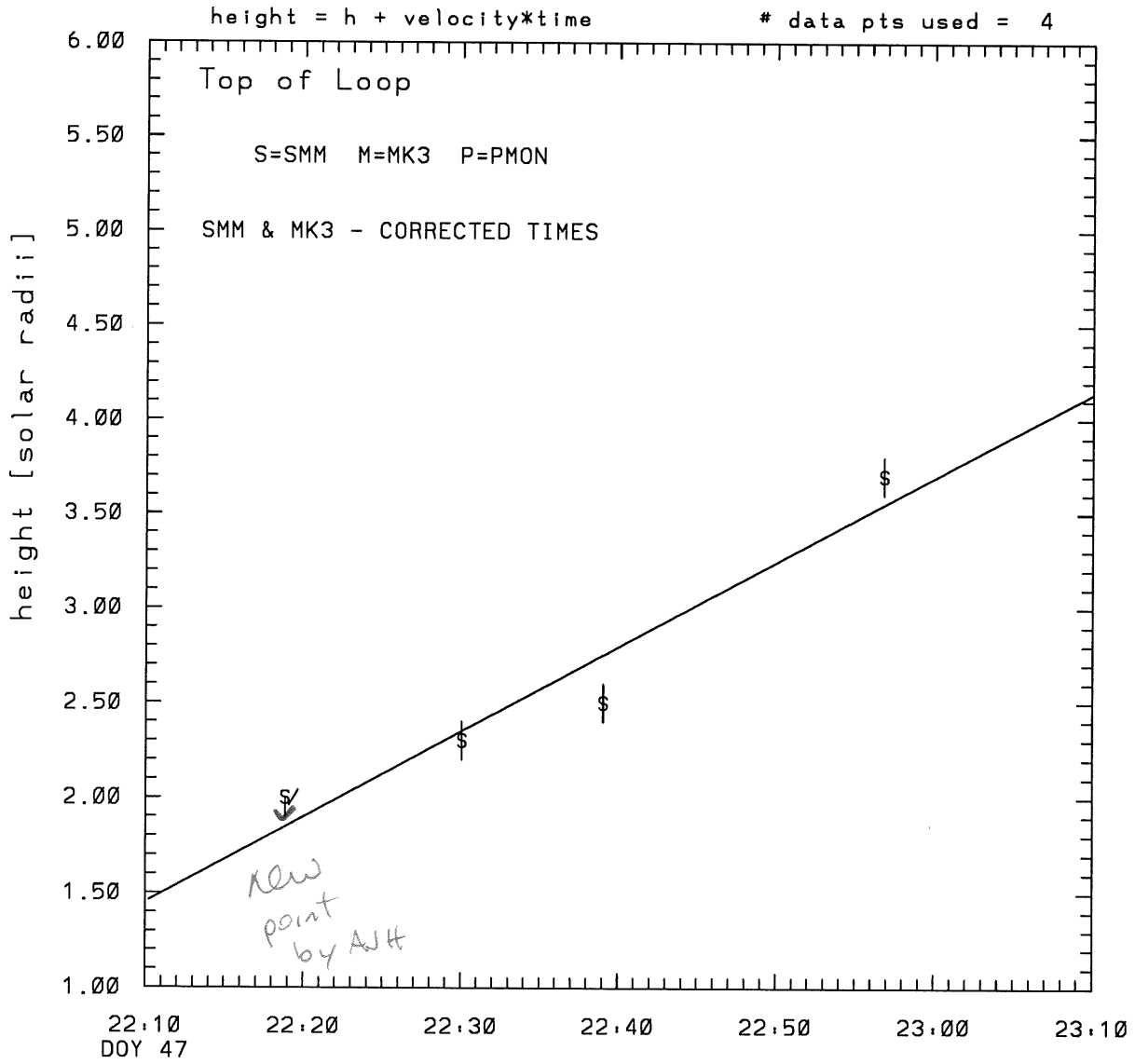
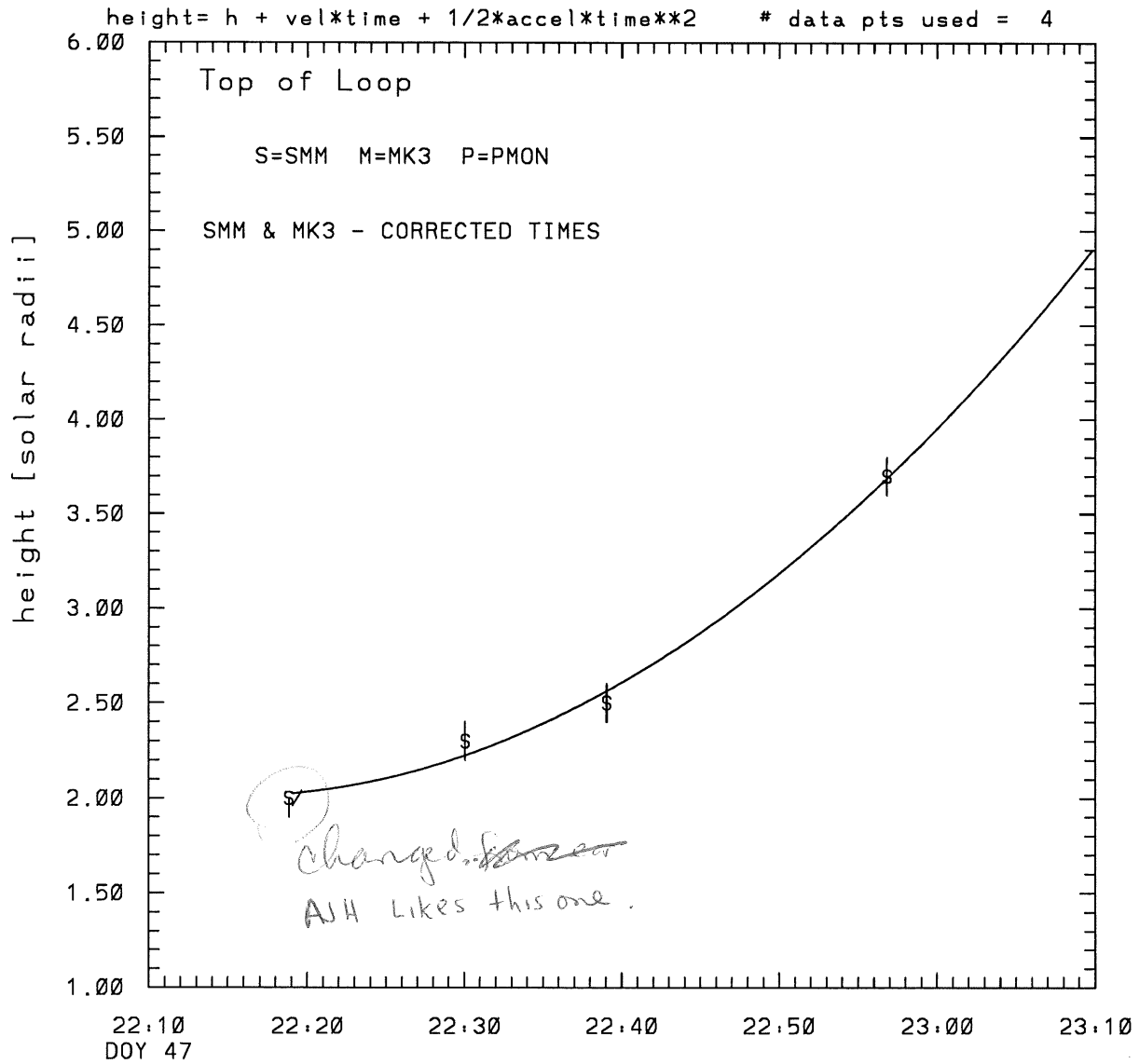


SMM C/P 1986 DOY 47 260 +/- 0 degrees



tstart=DOY 47 22: 0 +/- 1.0 [min.]  
radial velocity= 520. +/- 81. [km/sec]

SMM C/P 1986 DOY 47 260 +/- 0 degrees

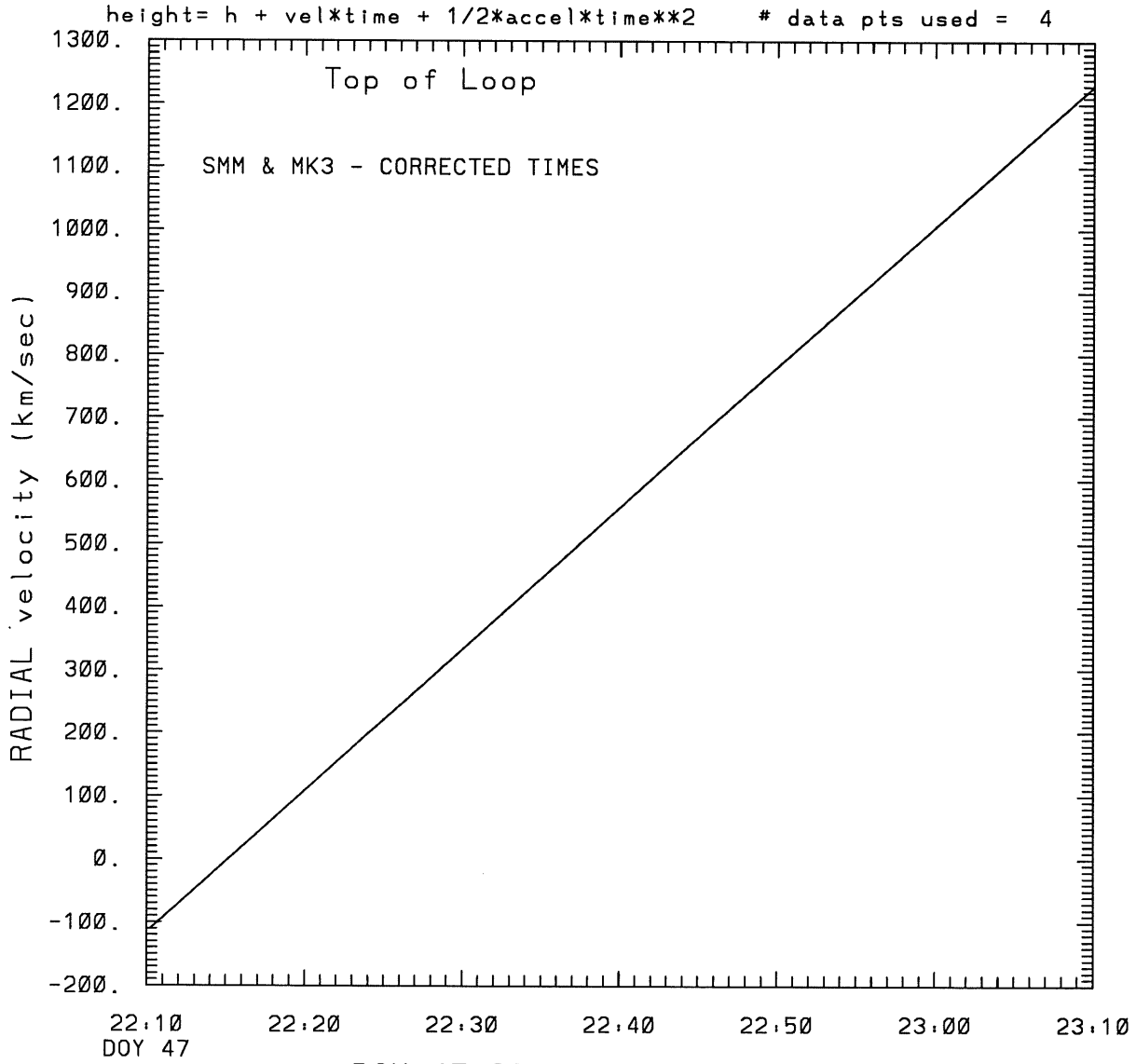


tstart=DOY 47 22:15 from derivative=0

Event begins at 2.01 Solar Radii

radial acceleration = 0.3737 +/- 0.0837 [km/sec\*\*2]

SMM C/P 1986 DOY 47 260 +/- 0 degrees



tstart=DOY 47 22:15 from derivative=0  
Event begins at 2.01 Solar Radii  
radial acceleration=0.374E+00 km/sec\*\*2

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

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

year	doy	time	radii	radius	error in angle	error in angle	datatype
1986	47	22:18:50	2.00 +/-	0.10	260.0 +/-	0.5	SMM UPPER LIMIT
1986	47	22:30: 3	2.30 +/-	0.10	260.0 +/-	0.5	SMM
1986	47	22:39: 4	2.50 +/-	0.10	260.0 +/-	0.5	SMM
1986	47	22:56:50	3.70 +/-	0.10	260.0 +/-	1.0	SMM

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

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

START TIME:

Event began at t = 0 + -0.100E+02 +/- 0.101E+01 [minutes]  
In more convenient units:  
Event began at DOY 47 22:00 +/- 0.101E+01 [minutes]  
Event began at DOY 47 22: 0 +/- 0.101E+01 [minutes]  
Origin defined at DOY 47 22:10

RADIAL INFORMATION:

RADIAL VELOCITY = 520. +/- 81. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.145E+01 +/- 0.207E+00 [solar radii]  
c(2) = 0.448E-01 +/- 0.697E-02 [radii/min]  
c(2) = 0.520E+03 +/- 0.809E+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)= 0.25324E+00 [radii] see Bevington pg. 114  
error in c(2)= 0.85389E-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) = 260. +/- 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 RADIAL velocity at 22:18 = 520. km/sec

The RADIAL velocity at 22:30 = 520. km/sec

The RADIAL velocity at 22:39 = 520. km/sec

The RADIAL velocity at 22:56 = 520. 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 = 0.139E+02

Error in time = 0.74900E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.376E-01

Reduced Chi Squared = 0.156E+00

Chi Squared = 0.311E+00

The probability for exceeding chi square = 0.963E+00

The correlation coefficient = 0.966E+00

The probability that no LINEAR correlation exists between the variables = 0.3441]

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

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

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

year	doy	time	radii	radius	angle	error in angle	datatype
1986	47	22:18:50	2.00 +/- 0.10	260.0 +/- 0.5			SMM
1986	47	22:30: 3	2.30 +/- 0.10	260.0 +/- 0.5			SMM
1986	47	22:39: 4	2.50 +/- 0.10	260.0 +/- 0.5			SMM
1986	47	22:56:50	3.70 +/- 0.10	260.0 +/- 1.0			SMM

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

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

START TIME:

tstart=DOY 47 22:15 from derivative = 0  
Event begins at 2.01 Solar Radii  
Origin defined at DOY 47 22:10

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.374E+00 +/- 0.837E-01 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.204E+01 +/- 0.152E+00 [solar radii]  
c(2) = -0.997E-02 +/- 0.125E-01 [radii/min]  
c(2) = -0.116E+03 +/- 0.146E+03 [km/sec]  
c(3) = 0.966E-03 +/- 0.216E-03 [radii/min\*\*2]  
c(3) = 0.374E+00 +/- 0.837E-01 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.21482E+00 [radii] Bevington pg 154 (8-30)  
Exact error in c(1) = 0.74524E-01 [radii] Bevington pg 154 (8-28)  
Approximate error in c(2) = 0.17744E-01 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.84624E-02 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.30615E-03 [radii/min\*\*2] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.14918E-03 [radii/min\*\*2] 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) = 260. +/- 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 RADIAL velocity at 22:18 = 82. km/sec

The RADIAL velocity at 22:30 = 334. km/sec

The RADIAL velocity at 22:39 = 536. km/sec

The RADIAL velocity at 22:56 = 934. 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 = 0.139E+02

Value of reduced Chi Squared returned from nllst2 = 0.514E-02

Reduced Chi Squared = 0.242E-01

Chi Squared = 0.242E-01

The probability for exceeding chi square = 0.943E+00

For a second order fit 3 correlation coefficients are given:

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

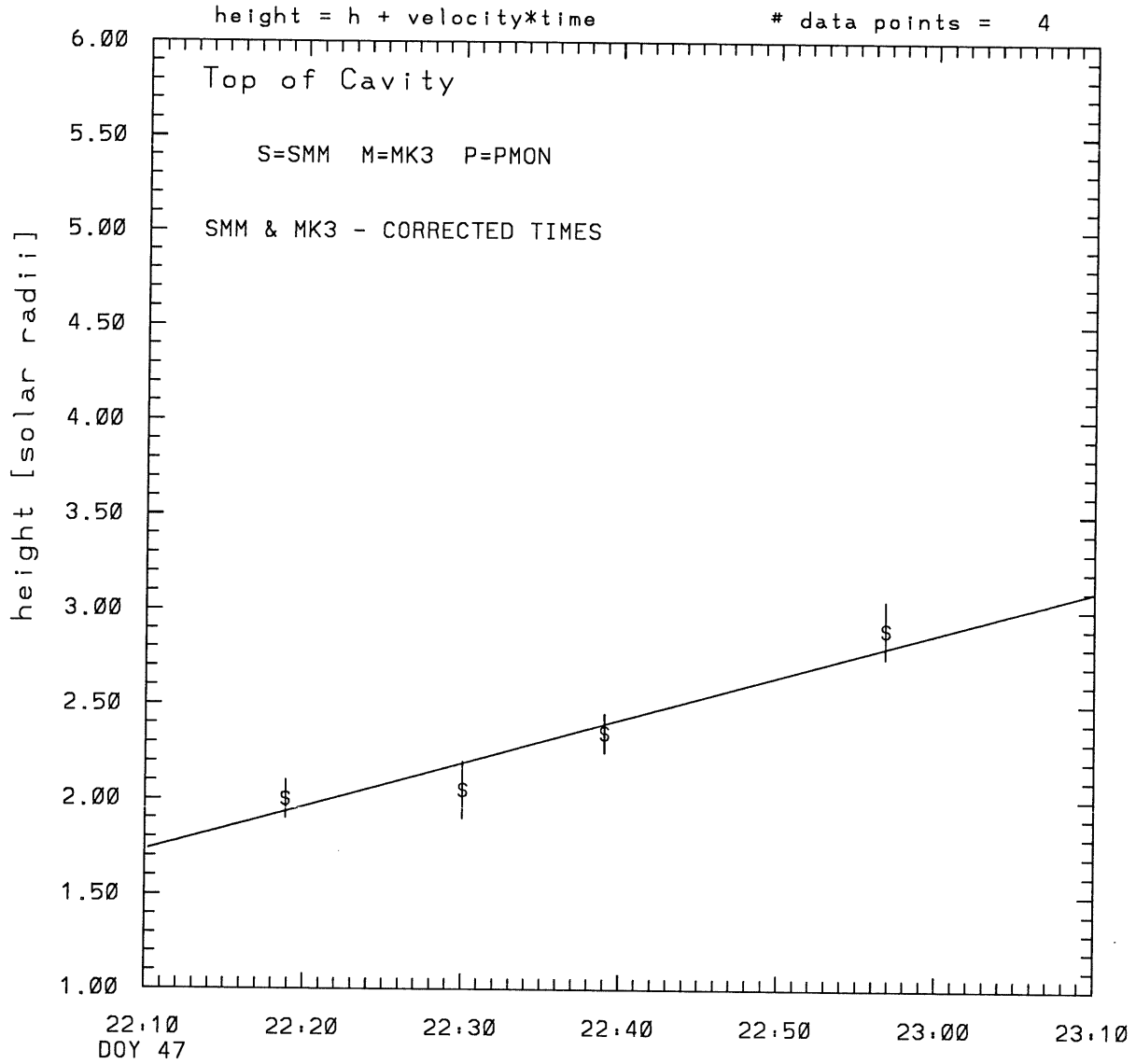
The correlation between the data and the term linear in time = 0.9656E+00

The correlation between the data and the time\*\*2 term = 0.9959E+00

The correlation between the data and the complete equation of motion=0.9938E+00

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

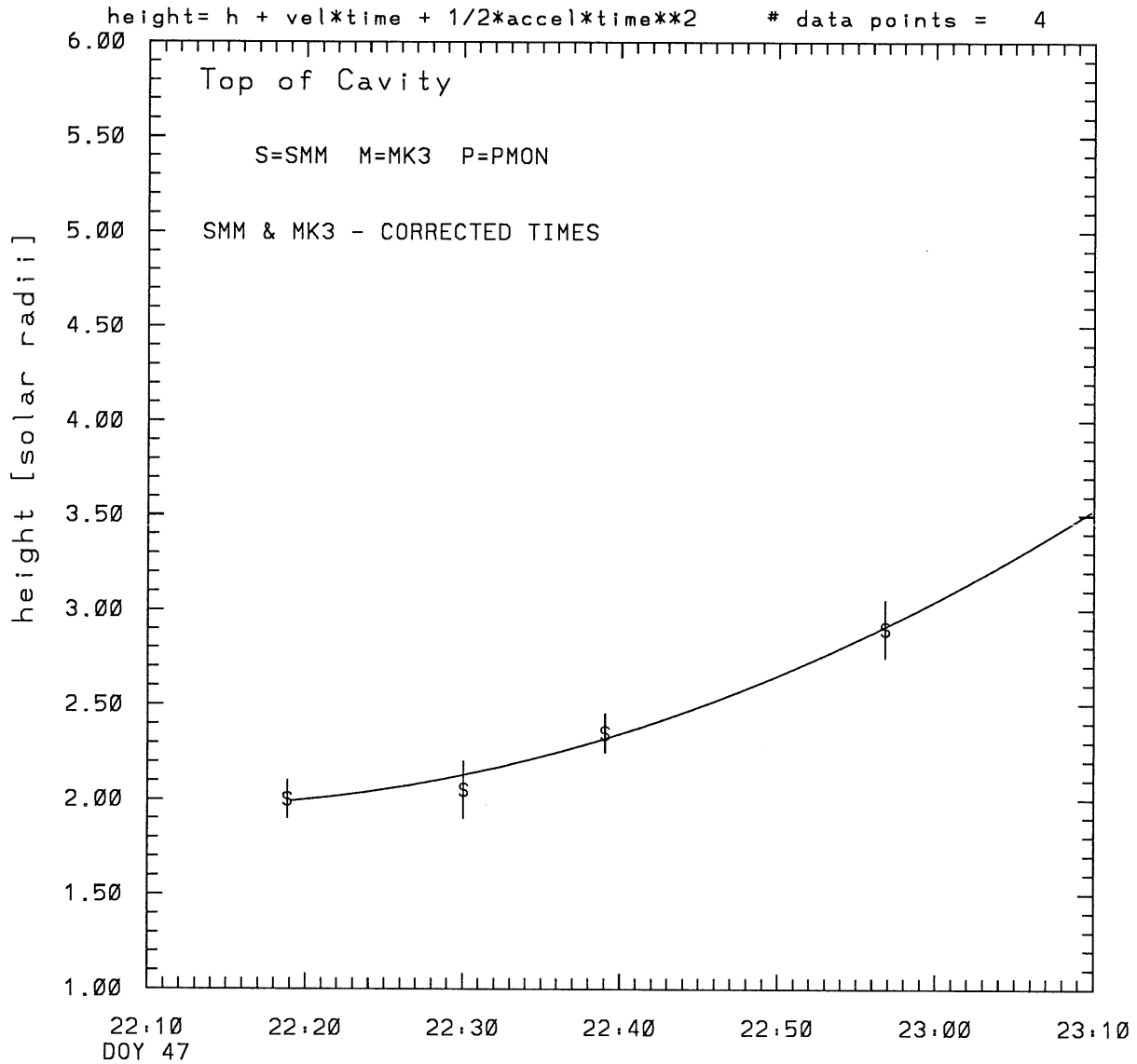
SMM C/P 1986 DOY 47 260 +/- 0 degrees



tstart=DOY 47 21:38 +/- 3.1 [min.]  
radial velocity= 265. +/- 42. [km/sec]



SMM C/P 1986 DOY 47 260 +/- 0 degrees

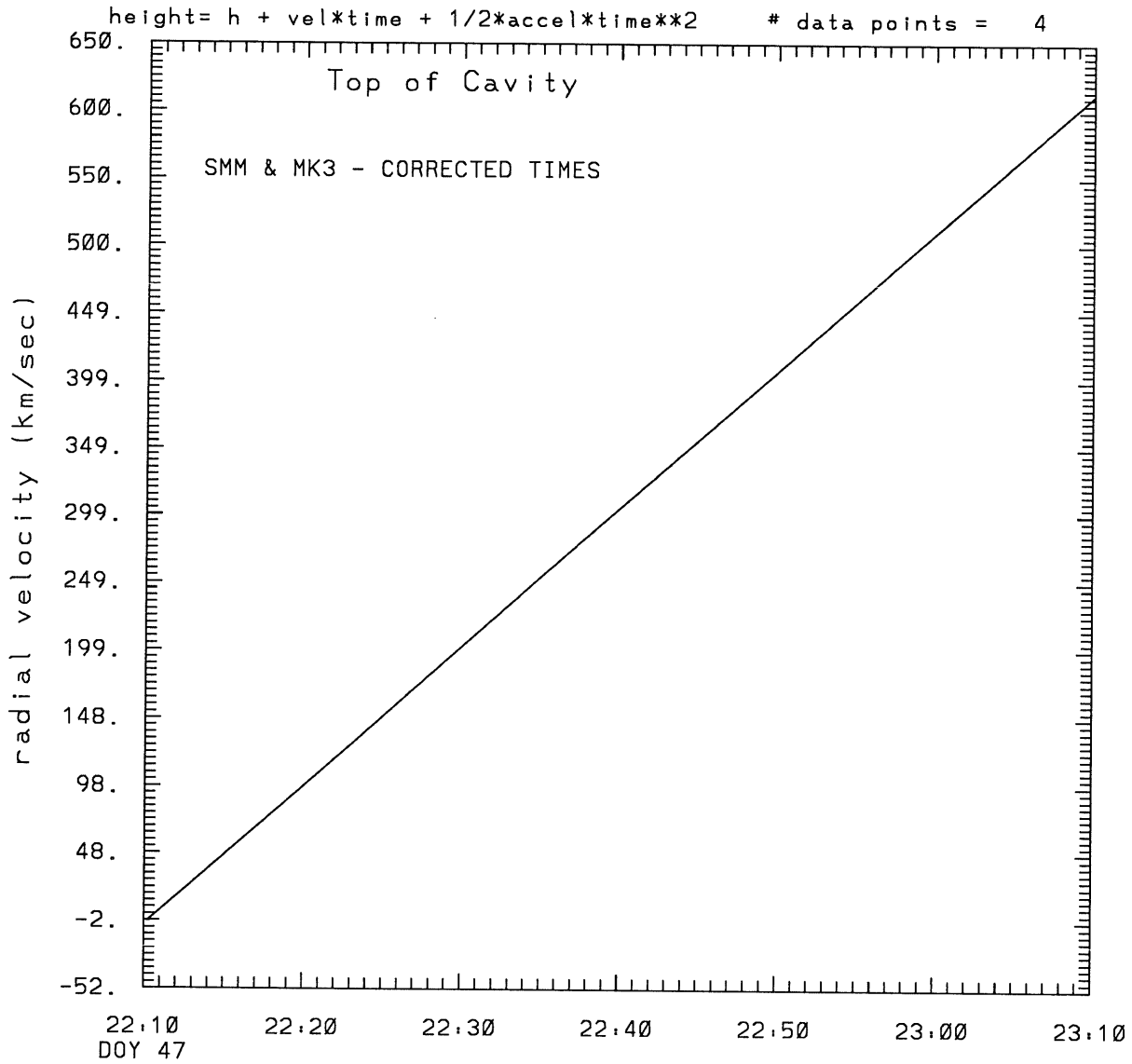


tstart=DOY 47 22:10 from derivative=0

Event begins at 1.96 Solar Radii

radial acceleration = 0.1714 +/- 0.0591 [km/sec\*\*2]

SMM C/P 1986 DOY 47 260 +/- 0 degrees



tstart=DOY 47 22:10 from derivative=0  
Event begins at 1.96 Solar Radii  
radial acceleration=0.171E+00 km/sec\*\*2

\*\*\*\*\*

This is a 1 order run

\*\*\*\*\*

\*\*\*\*\*

INPUT:

\*\*\*\*\*

year	day	time	radii	radius	error in	angle	angle	error in	datatype
1986	47	22:18:50	2.00	+/- 0.10		260.0	+/- 0.5		SMM
1986	47	22:30: 3	2.05	+/- 0.15		260.0	+/- 0.5		SMM
1986	47	22:39: 4	2.35	+/- 0.10		260.0	+/- 0.5		SMM
1986	47	22:56:50	2.90	+/- 0.15		260.0	+/- 0.5		SMM

\*\*\*\*\*

Structure being measured:

Top of Cavity

\*\*\*\*\*

\*\*\*\*\*

OUTPUT:

\*\*\*\*\*

START TIME:

Event began at t = 0 + -0.320E+02 +/- 0.306E+01 [minutes]

In more convenient units:

Event began at DOY 47 21:38 +/- 0.306E+01 [minutes]

Origin defined at DOY 47 22:10

RADIAL INFORMATION:

RADIAL VELOCITY = 265. +/- 42. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

- c(1) = 0.173E+01 +/- 0.973E-01 [solar radii]
- c(2) = 0.229E-01 +/- 0.363E-02 [radii/min]
- c(2) = 0.265E+03 +/- 0.421E+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)= 0.14254E+00 [radii] see Bevington pg. 114

error in c(2)= 0.48062E-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) = 260. +/- 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 22:18 = 0.000E+00 km/sec

The TOTAL velocity at 22:18 = 265. km/sec

The TANGENTIAL velocity at 22:30 = 0.000E+00 km/sec

The TOTAL velocity at 22:30 = 265. km/sec

The TANGENTIAL velocity at 22:39 = 0.000E+00 km/sec

The TOTAL velocity at 22:39 = 265. km/sec

The TANGENTIAL velocity at 22:56 = 0.000E+00 km/sec

The TOTAL velocity at 22:56 = 265. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.41

Standard Deviation in start time measurement = 0.139E+02

Error in time = 0.82704E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.900E-02

Reduced Chi Squared = 0.441E-01

Chi Squared = 0.882E-01

The probability for exceeding chi square = 0.991E+00

The correlation coefficient = 0.968E+00

The probability that no LINEAR correlation exists between the variables = 0.3201E-01

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

\*\*\*\*\*

This is a 2 order run

\*\*\*\*\*

\*\*\*\*\*

INPUT:

\*\*\*\*\*

year	doy	time	radii	radius	error in	angle	angle	datatype
1986	47	22:18:50	2.00	+/- 0.10	260.0	+/- 0.5	SMM	
1986	47	22:30: 3	2.05	+/- 0.15	260.0	+/- 0.5	SMM	
1986	47	22:39: 4	2.35	+/- 0.10	260.0	+/- 0.5	SMM	
1986	47	22:56:50	2.90	+/- 0.15	260.0	+/- 0.5	SMM	

\*\*\*\*\*

Structure being measured:

Top of Cavity

\*\*\*\*\*

\*\*\*\*\*

OUTPUT:

\*\*\*\*\*

START TIME:

tstart=DOY 47 22:10 from derivative = 0

Event begins at 1.96 Solar Radii

Origin defined at DOY 47 22:10

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.171E+00 +/- 0.591E-01 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.196E+01 +/- 0.937E-01 [solar radii]  
c(2) = -0.403E-03 +/- 0.825E-02 [radii/min]  
c(2) = -0.467E+01 +/- 0.957E+02 [km/sec]  
c(3) = 0.443E-03 +/- 0.153E-03 [radii/min\*\*2]  
c(3) = 0.171E+00 +/- 0.591E-01 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.17994E+00 [radii] Bevington pg 154 (8-30)  
Exact error in c(1) = 0.37774E-01 [radii] Bevington pg 154 (8-28)  
Approximate error in c(2) = 0.14863E-01 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.44877E-02 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.25644E-03 [radii/min\*\*] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.80447E-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) = 260. +/- 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 22:18 = 0.000E+00 km/sec

The TOTAL velocity at 22:18 = 86. km/sec

The TANGENTIAL velocity at 22:30 = 0.000E+00 km/sec

The TOTAL velocity at 22:30 = 202. km/sec

The TANGENTIAL velocity at 22:39 = 0.000E+00 km/sec

The TOTAL velocity at 22:39 = 294. km/sec

The TANGENTIAL velocity at 22:56 = 0.000E+00 km/sec

The TOTAL velocity at 22:56 = 477. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.41

Standard Deviation in start time measurement = 0.139E+02

Value of reduced Chi Squared returned from nllst2 = 0.259E-02

Reduced Chi Squared = 0.154E-01

Chi Squared = 0.154E-01

The probability for exceeding chi square = 0.959E+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 = 0.9275E+00

The correlation between the data and the time\*\*2 term = 0.8912E+00

The correlation between the data and the complete equation of motion = 0.9942E+00

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