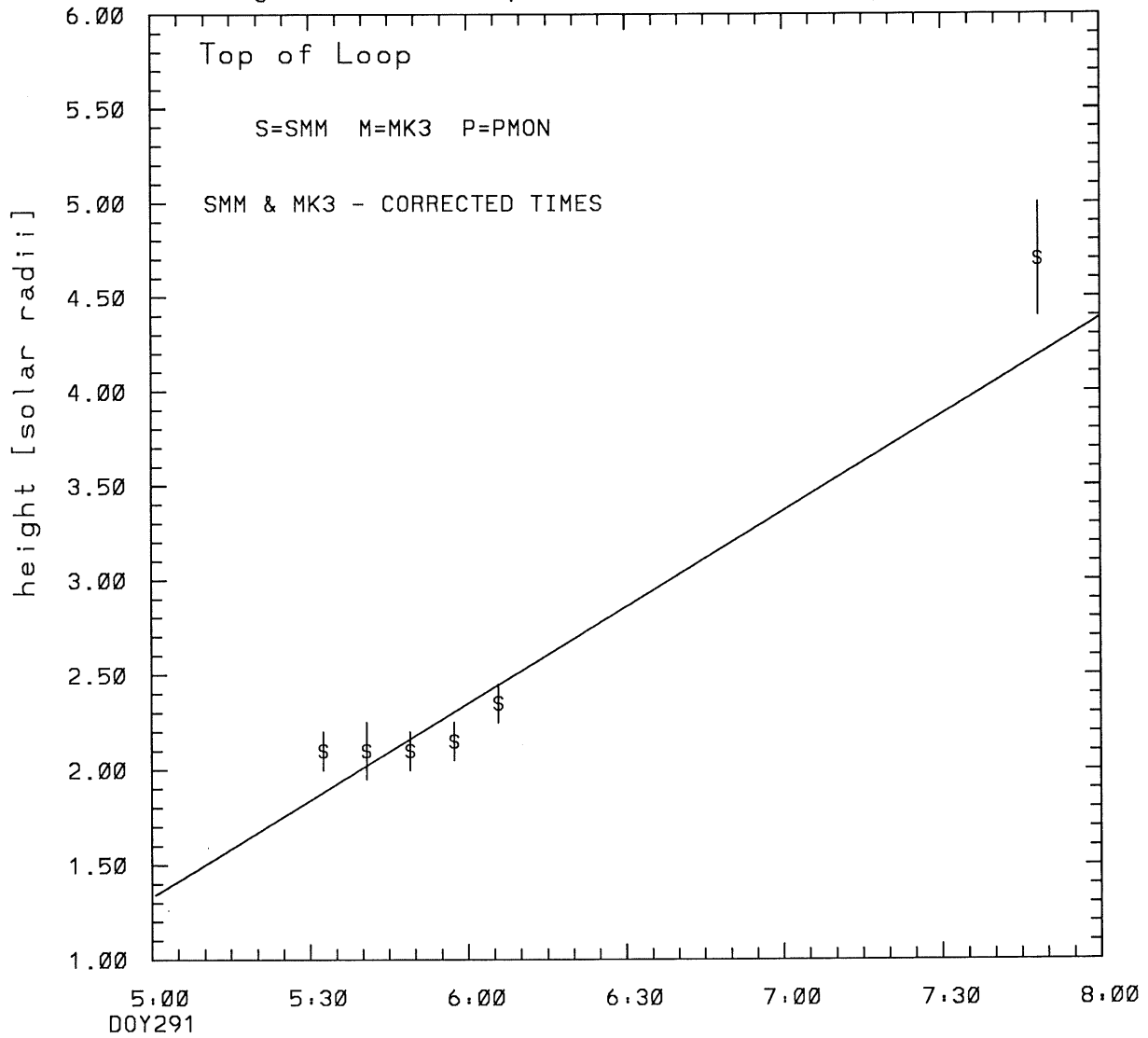


SMM C/P 1988 DOY291 77 +/- 0 degrees

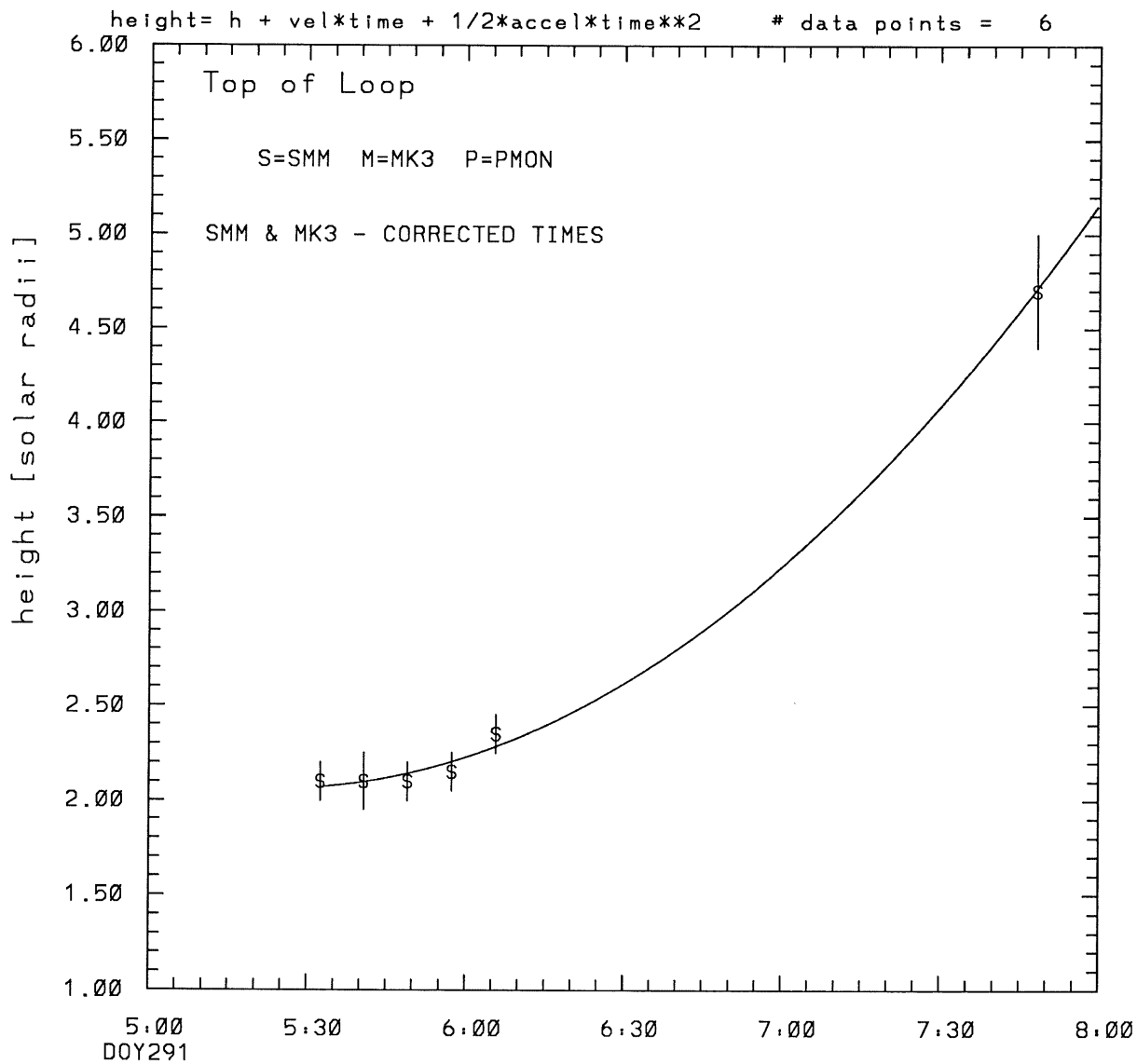
height = h + velocity\*time

# data points = 6



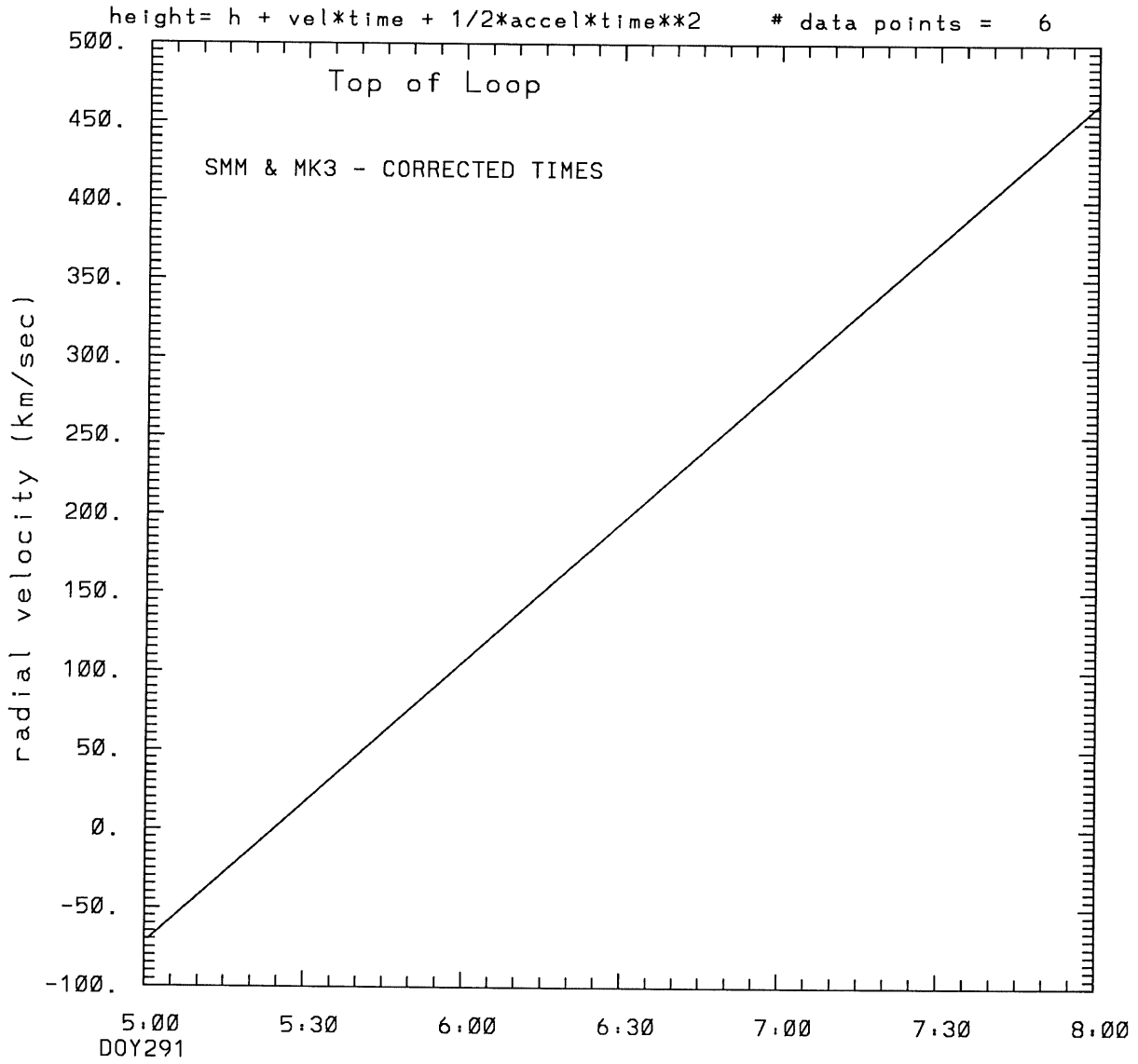
tstart=DOY291 4.41 +/- 2.1 [min.]  
radial velocity= 197. +/- 38. [km/sec]

SMM C/P 1988 DOY291 77 +/- 0 degrees



tstart=DOY291 5:24 from derivative=0  
Event begins at 2.06 Solar Radii  
radial acceleration = 0.0495 +/- 0.0075 [km/sec\*\*2]

SMM C/P 1988 DOY291 77 +/- 0 degrees



tstart=DOY291 5.24 from derivative=0  
Event begins at 2.06 Solar Radii  
radial acceleration=0.495E-01 km/sec\*\*2

\*\*\*\*\*

This is a 1 order run

\*\*\*\*\*

\*\*\*\*\*

INPUT:

\*\*\*\*\*

year	day	time	error in radii	error in radius	error in angle	error in angle	datatype
1988	291	5:32:30	2.10 +/- 0.10		77.0 +/- 0.5		SMM
1988	291	5:40:44	2.10 +/- 0.15		77.0 +/- 0.5		SMM
1988	291	5:49: 4	2.10 +/- 0.10		77.0 +/- 0.5		SMM
1988	291	5:57:25	2.15 +/- 0.10		77.0 +/- 0.5		SMM
1988	291	6: 5:47	2.35 +/- 0.10		77.0 +/- 0.5		SMM
1988	291	7:48:12	4.70 +/- 0.30		77.0 +/- 1.0		SMM

\*\*\*\*\*

Structure being measured:

Top of Loop

\*\*\*\*\*

\*\*\*\*\*

OUTPUT:

\*\*\*\*\*

START TIME:

Event began at  $t = 0 + -0.194E+02 +/- 0.215E+01$  [minutes]

In more convenient units:

Event began at DOY 291 4:41 +/- 0.215E+01 [minutes]

Origin defined at DOY291 5: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 197. +/- 38. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.133E+01 +/- 0.189E+00$  [solar radii]  
 $c(2) = 0.170E-01 +/- 0.329E-02$  [radii/min]  
 $c(2) = 0.197E+03 +/- 0.382E+02$  [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  $c(1) = 0.22062E+00$  [radii] see Bevington pg. 114

error in  $c(2) = 0.26676E-02$  [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) = 77. +/- 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 5:32 = 0. km/sec

The TOTAL velocity at 5:32 = 197. km/sec

The TANGENTIAL velocity at 5:40 = 0. km/sec

The TOTAL velocity at 5:40 = 197. km/sec

The TANGENTIAL velocity at 5:49 = 0. km/sec

The TOTAL velocity at 5:49 = 197. km/sec

The TANGENTIAL velocity at 5:57 = 0. km/sec

The TOTAL velocity at 5:57 = 197. km/sec

The TANGENTIAL velocity at 6: 5 = 0. km/sec

The TOTAL velocity at 6: 5 = 197. km/sec

The TANGENTIAL velocity at 7:48 = 0. km/sec

The TOTAL velocity at 7:48 = 197. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 1.04

Standard Deviation in start time measurement = 0.457E+02

Error in time = 0.35145E+02 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.308E-01

Reduced Chi Squared = 0.451E+00

Chi Squared = 0.180E+01

The probability for exceeding chi square = 0.998E+00

The correlation coefficient = 0.985E+00

The probability that no LINEAR correlation exists between the variables = 0.3226E-03

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
1988	291	5:32:30	2.10 +/- 0.10	2.10 +/- 0.10	77.0 +/- 0.5	77.0 +/- 0.5	SMM
1988	291	5:40:44	2.10 +/- 0.15	2.10 +/- 0.15	77.0 +/- 0.5	77.0 +/- 0.5	SMM
1988	291	5:49: 4	2.10 +/- 0.10	2.10 +/- 0.10	77.0 +/- 0.5	77.0 +/- 0.5	SMM
1988	291	5:57:25	2.15 +/- 0.10	2.15 +/- 0.10	77.0 +/- 0.5	77.0 +/- 0.5	SMM
1988	291	6: 5:47	2.35 +/- 0.10	2.35 +/- 0.10	77.0 +/- 0.5	77.0 +/- 0.5	SMM
1988	291	7:48:12	4.70 +/- 0.30	4.70 +/- 0.30	77.0 +/- 1.0	77.0 +/- 1.0	SMM

\*\*\*\*\*

Structure being measured:

Top of Loop

\*\*\*\*\*

\*\*\*\*\*

OUTPUT:

\*\*\*\*\*

START TIME:

tstart=DOY291 5:24 from derivative = 0

Event begins at 2.06 Solar Radii

Origin defined at DOY291 5: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.495E-01 +/- 0.751E-02 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.214E+01 +/- 0.137E+00 [solar radii]  
 c(2) = -0.623E-02 +/- 0.368E-02 [radii/min]  
 c(2) = -0.723E+02 +/- 0.427E+02 [km/sec]  
 c(3) = 0.128E-03 +/- 0.194E-04 [radii/min\*\*2]  
 c(3) = 0.495E-01 +/- 0.751E-02 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.15170E+00 [radii] Bevington pg 154 (8-30)  
 Exact error in c(1) = 0.57143E-01 [radii] Bevington pg 154 (8-28)  
 Approximate error in c(2) = 0.40407E-02 [radii/min] Bevington pg 154 (8-30)  
 Exact error in c(2) = 0.17419E-02 [radii/min] Bevington pg 154 (8-28)  
 Approximate error in c(3) = 0.19119E-04 [radii/min\*\*] Bevington pg 154 (8-30)  
 Exact error in c(3) = 0.83523E-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) = 77. +/- 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 5:32 = 0. km/sec

The TOTAL velocity at 5:32 = 24. km/sec

The TANGENTIAL velocity at 5:40 = 0. km/sec

The TOTAL velocity at 5:40 = 49. km/sec

The TANGENTIAL velocity at 5:49 = 0. km/sec

The TOTAL velocity at 5:49 = 74. km/sec

The TANGENTIAL velocity at 5:57 = 0. km/sec

The TOTAL velocity at 5:57 = 98. km/sec

The TANGENTIAL velocity at 6: 5 = 0. km/sec

The TOTAL velocity at 6: 5 = 123. km/sec

The TANGENTIAL velocity at 7:48 = 0 km/sec

The TOTAL velocity at 7:48 = 428. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 1.04

Standard Deviation in start time measurement = 0.457E+02

Value of reduced Chi Squared returned from nllst2 = 0.324E-02

Reduced Chi Squared = 0.136E-01

Chi Squared = 0.409E-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 = 0.5588E+00

The correlation between the data and the time\*\*2 term = 0.5603E+00

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

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