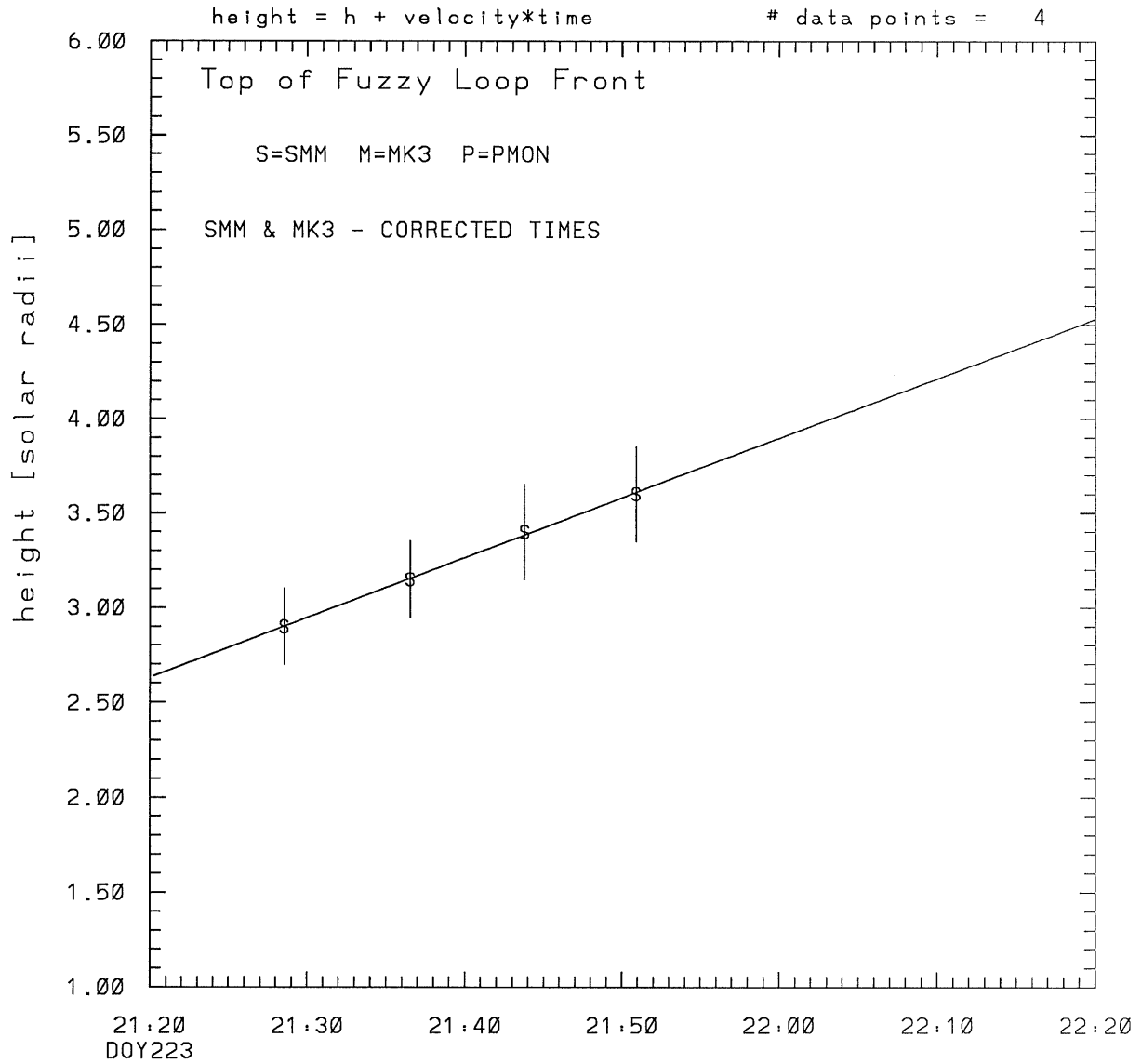
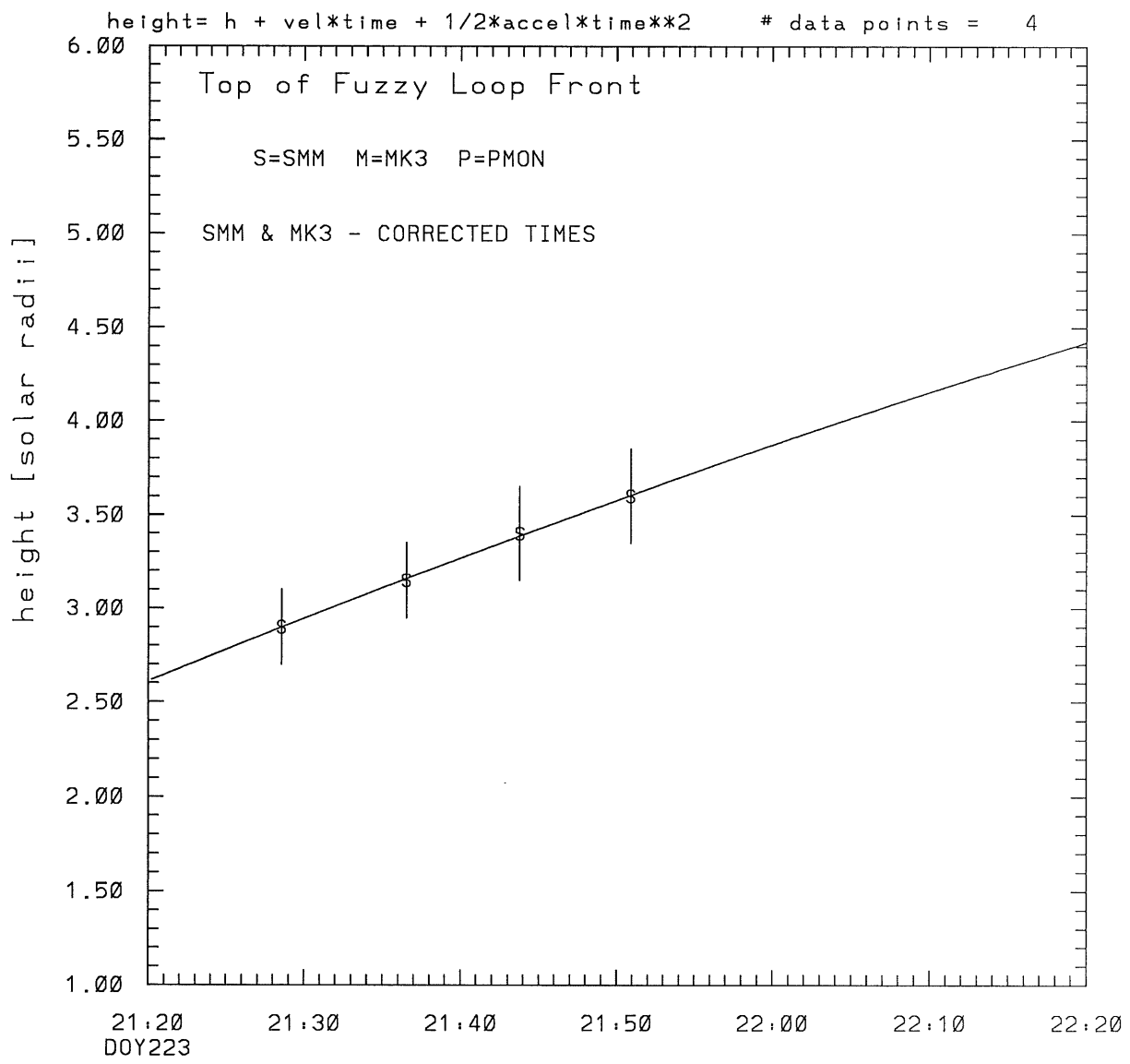


SMM C/P 1980 DOY223 105 +/- 0 degrees



tstart=DOY223 20:30 +/- 0.4 [min.]  
radial velocity= 367. +/- 7. [km/sec]

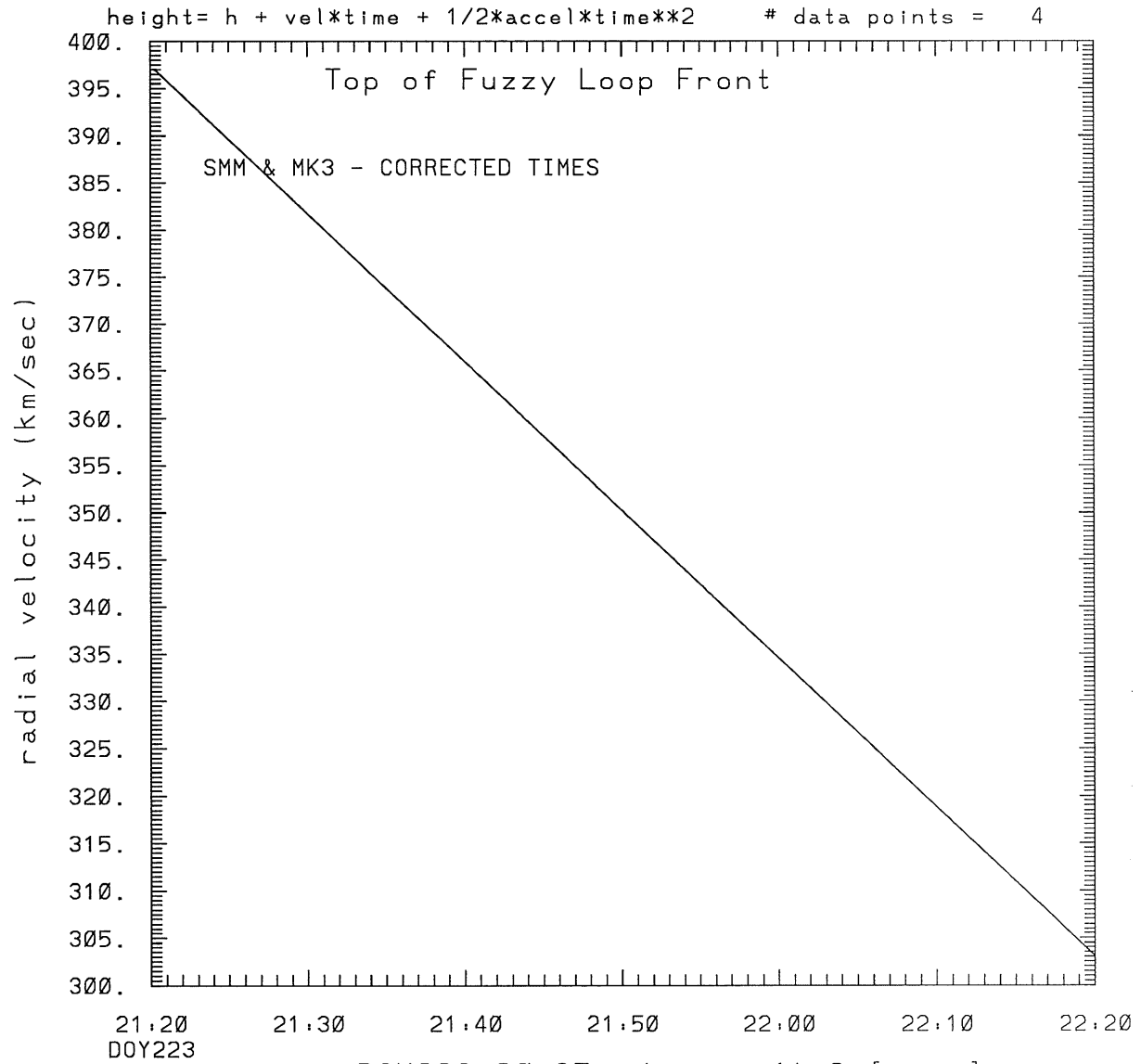
SMM C/P 1980 DOY223 105 +/- 0 degrees



tstart=DOY223 20:37 +/- 41.3 [min.]

radial acceleration=-0.0262 +/- 0.0380 [km/sec\*\*2]

SMM C/P 1980 DOY223 105 +/- 0 degrees



tstart=DOY223 20:37 +/- 41.3 [min.]

radial acceleration=-.262E-01 km/sec\*\*2

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

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

year	doy	time	radii	error in radius	angle	error in angle	datatype
1980	223	21:28:32	2.90	+/- 0.20	105.0	+/- 0.5	SMM
1980	223	21:36:32	3.15	+/- 0.20	105.0	+/- 1.0	SMM
1980	223	21:43:47	3.40	+/- 0.25	105.0	+/- 1.0	SMM
1980	223	21:50:55	3.60	+/- 0.25	105.0	+/- 1.0	SMM

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

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

START TIME:

Event began at  $t = 0 + -0.515E+02 +/- 0.358E+00$  [minutes]  
In more convenient units:  
Event began at DOY 223 20:30 +/- 0.358E+00 [minutes]

Origin defined at DOY223 21:20

RADIAL INFORMATION:

RADIAL VELOCITY = 367. +/- 7. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.263E+01 +/- 0.123E-01 [solar radii]  
c(2) = 0.316E-01 +/- 0.611E-03 [radii/min]  
c(2) = 0.367E+03 +/- 0.709E+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)= 0.17789E-01 [radii] see Bevington pg. 114  
error in c(2)= 0.82324E-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) = 105. +/- 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 21:28 = 0.000E+00 km/sec

The TOTAL velocity at 21:28 = 367. km/sec

The TANGENTIAL velocity at 21:36 = 0.000E+00 km/sec

The TOTAL velocity at 21:36 = 367. km/sec

The TANGENTIAL velocity at 21:43 = 0.000E+00 km/sec

The TOTAL velocity at 21:43 = 367. km/sec

The TANGENTIAL velocity at 21:50 = 0.000E+00 km/sec

The TOTAL velocity at 21:50 = 367. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.30

Standard Deviation in start time measurement = 0.832E+01

Error in time = 0.61234E+00 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.100E-03

Reduced Chi Squared = 0.596E-03

Chi Squared = 0.119E-02

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 = 0.6624E-03

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

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

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

year	day	time	radii	error in radius	angle	error in angle	datatype
1980	223	21:28:32	2.90	+/- 0.20	105.0	+/- 0.5	SMM
1980	223	21:36:32	3.15	+/- 0.20	105.0	+/- 1.0	SMM
1980	223	21:43:47	3.40	+/- 0.25	105.0	+/- 1.0	SMM
1980	223	21:50:55	3.60	+/- 0.25	105.0	+/- 1.0	SMM

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

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

START TIME:

Event began at  $t = 0 + -0.433E+02 +/- 0.413E+02$  [minutes]  
In more convenient units:  
Event began at DOY 223 20:37 +/- 0.413E+02 [minutes]

Origin defined at DOY223 21:20

RADIAL INFORMATION:

RADIAL ACCELERATION =  $-0.262E-01 +/- 0.380E-01$  km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.261E+01 +/- 0.329E-01$  [solar radii]  
 $c(2) = 0.343E-01 +/- 0.386E-02$  [radii/min]  
 $c(2) = 0.397E+03 +/- 0.448E+02$  [km/sec]  
 $c(3) = -0.678E-04 +/- 0.983E-04$  [radii/min\*\*2]  
 $c(3) = -0.262E-01 +/- 0.380E-01$  [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in  $c(1) = 0.51332E-01$  [radii] Bevington pg 154 (8-30)  
Exact error in  $c(1) = 0.17587E-01$  [radii] Bevington pg 154 (8-28)  
Approximate error in  $c(2) = 0.58625E-02$  [radii/min] Bevington pg 154 (8-30)  
Exact error in  $c(2) = 0.25193E-02$  [radii/min] Bevington pg 154 (8-28)  
Approximate error in  $c(3) = 0.14683E-03$  [radii/min\*\*] Bevington pg 154 (8-30)  
Exact error in  $c(3) = 0.64505E-04$  [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) = 105. +/- 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 21:28 = 0.000E+00 km/sec

The TOTAL velocity at 21:28 = 384. km/sec

The TANGENTIAL velocity at 21:36 = 0.000E+00 km/sec

The TOTAL velocity at 21:36 = 371. km/sec

The TANGENTIAL velocity at 21:43 = 0.000E+00 km/sec

The TOTAL velocity at 21:43 = 360. km/sec

The TANGENTIAL velocity at 21:50 = 0.000E+00 km/sec

The TOTAL velocity at 21:50 = 349. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.30  
Standard Deviation in start time measurement = 0.832E+01  
Value of reduced Chi Squared returned from nllst2 = 0.121E-03  
Reduced Chi Squared = 0.756E-03  
Chi Squared = 0.756E-03  
The probability for exceeding chi square = 0.991E+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 = 0.1002E+01

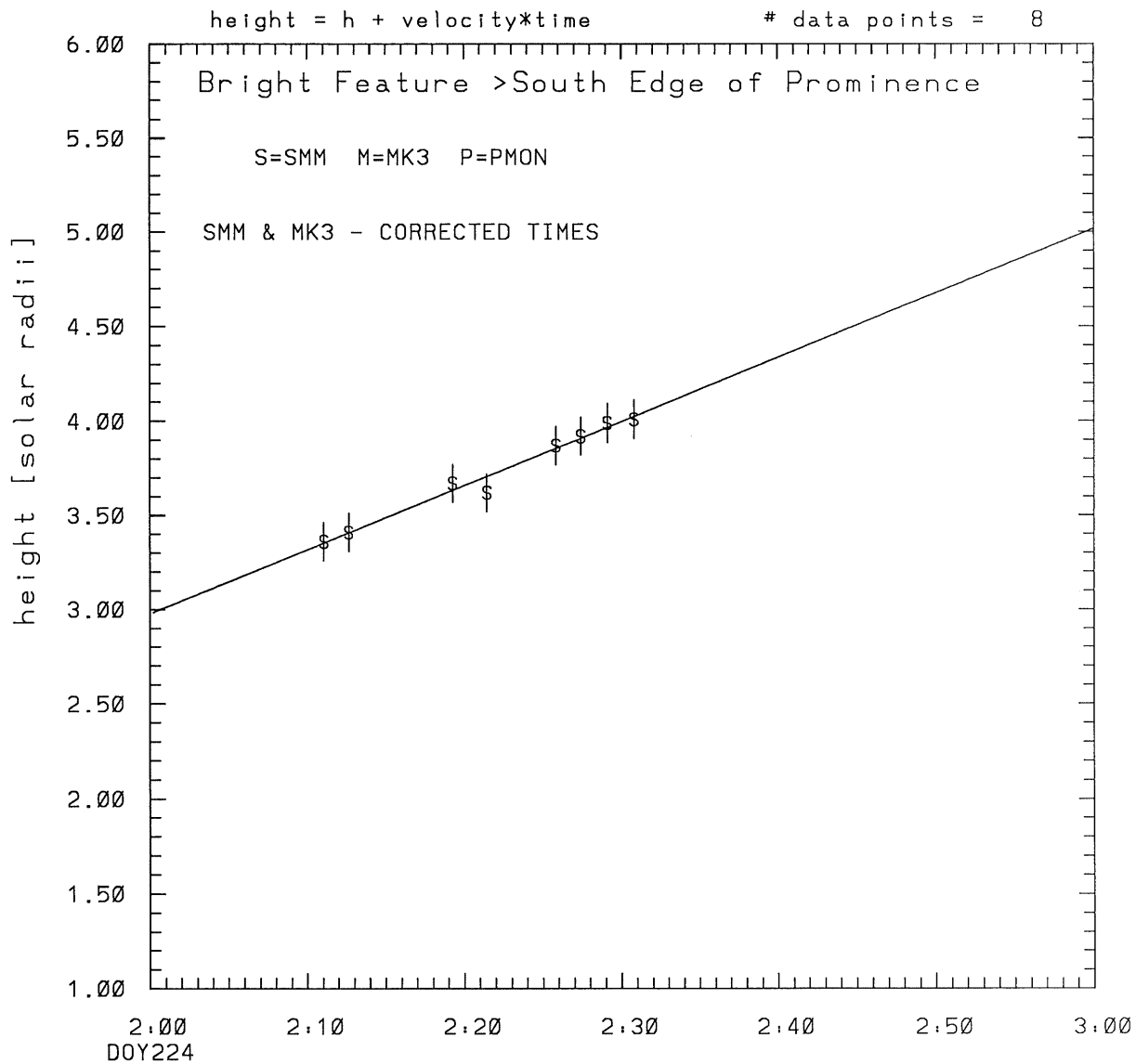
The correlation between the data and the time\*\*2 term = 0.9685E+00

The correlation between the data and the complete equation of motion = 0.9985E+00

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



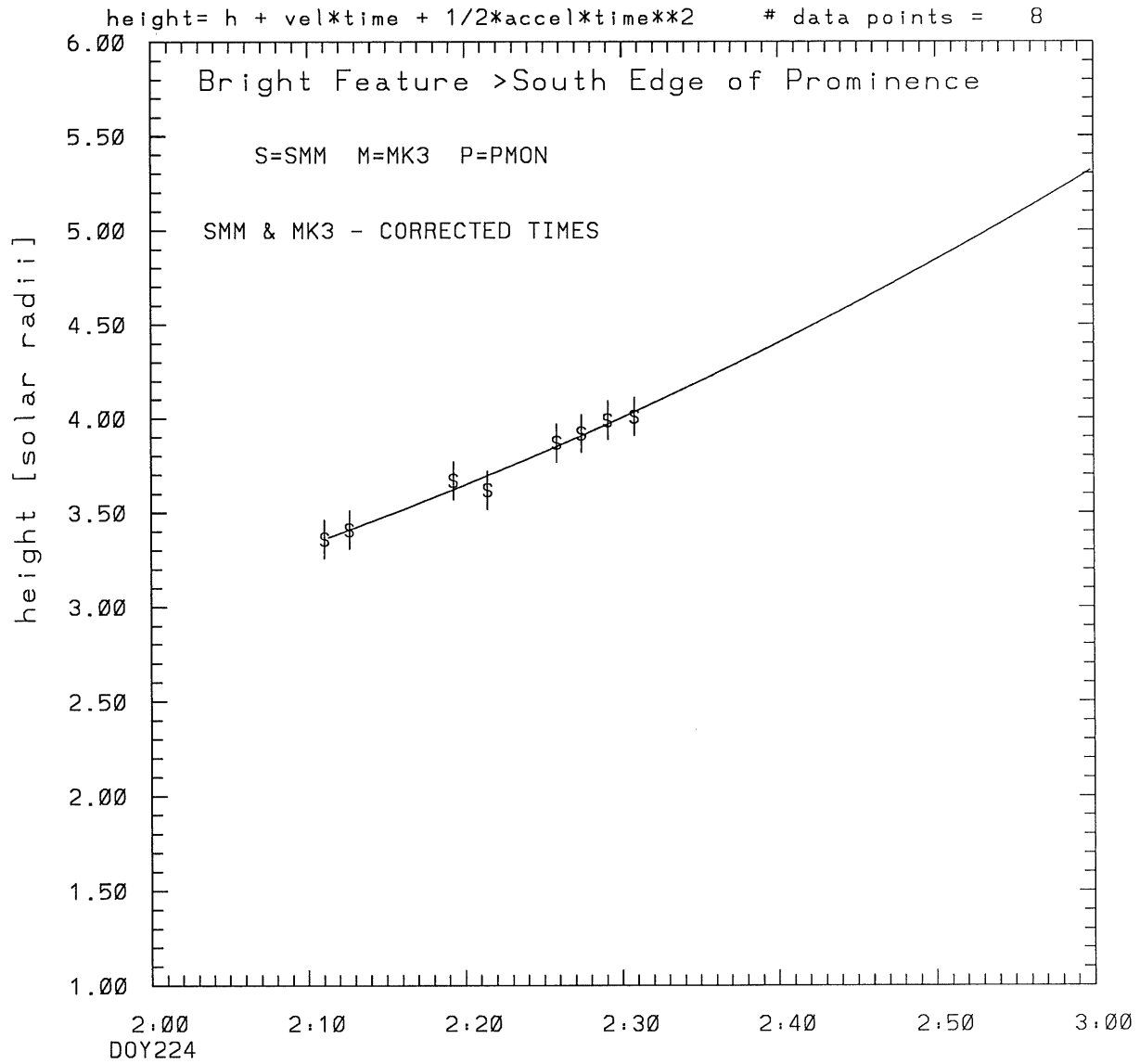
SMM C/P 1980 DOY224 151 +/- 0 degrees



tstart=DOY224 1: 2 +/- 0.3 [min.]  
radial velocity= 394. +/- 22. [km/sec]

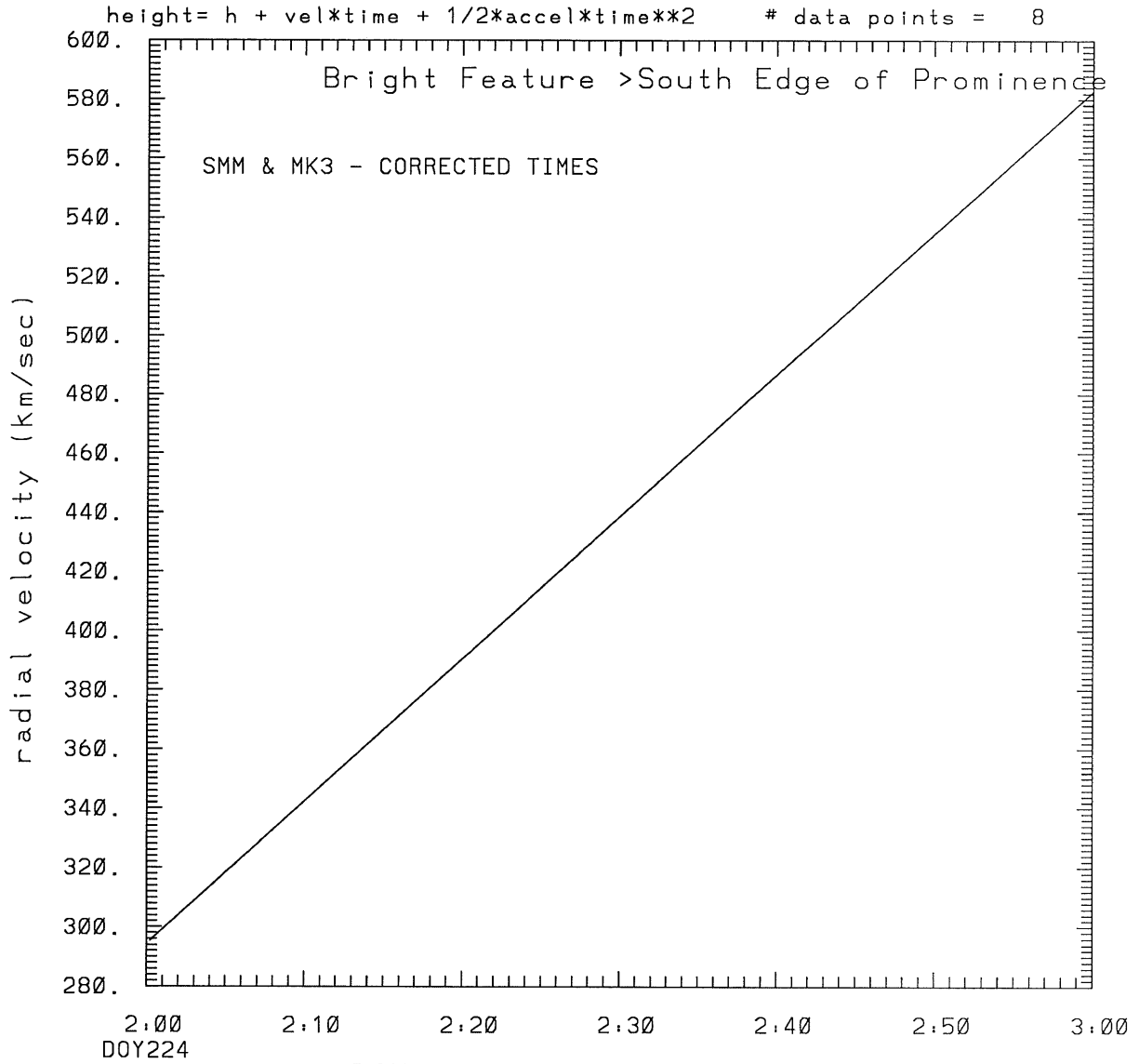


SMM C/P 1980 DOY224 151 +/- 0 degrees



tstart=DOY223 24:59 from derivative=0  
Event begins at 2.28 Solar Radii  
radial acceleration= 0.0801 +/- 0.1505 [km/sec\*\*2]

SMM C/P 1980 DOY224 151 +/- 0 degrees



tstart=DOY223 24:59 from derivative=0  
Event begins at 2.28 Solar Radii  
radial acceleration=0.801E-01 km/sec\*\*2

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

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

year	doy	time	radii	radius	error in angle	error in angle	datatype
1980	224	2:11:3	3.36	+/- 0.10	151.5	+/- 1.0	SMM
1980	224	2:12:38	3.41	+/- 0.10	151.5	+/- 1.0	SMM
1980	224	2:19:16	3.67	+/- 0.10	151.5	+/- 1.0	SMM
1980	224	2:21:27	3.62	+/- 0.10	151.5	+/- 1.0	SMM
1980	224	2:25:51	3.87	+/- 0.10	151.5	+/- 1.0	SMM
1980	224	2:27:25	3.92	+/- 0.10	151.5	+/- 1.0	SMM
1980	224	2:29:6	3.99	+/- 0.10	151.5	+/- 1.0	SMM
1980	224	2:30:48	4.01	+/- 0.10	151.5	+/- 1.0	SMM

\*\*\*\*\*  
Structure being measured:  
Bright Feature >South Edge of Prominence  
\*\*\*\*\*

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

START TIME:

Event began at  $t = 0 + -0.582E+02 +/- 0.348E+00$  [minutes]  
In more convenient units:  
Event began at DOY 224 1: 2 +/- 0.348E+00 [minutes]

Origin defined at DOY224 2: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 394. +/- 22. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.298E+01 +/- 0.447E-01$  [solar radii]  
 $c(2) = 0.340E-01 +/- 0.192E-02$  [radii/min]  
 $c(2) = 0.394E+03 +/- 0.223E+02$  [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  $c(1) = 0.48324E-01$  [radii] see Bevington pg. 114  
error in  $c(2) = 0.20775E-02$  [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) = 152. +/- 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 2:11 = 0.000E+00 km/sec

The TOTAL velocity at 2:11 = 394. km/sec

The TANGENTIAL velocity at 2:12 = 0.000E+00 km/sec

The TOTAL velocity at 2:12 = 394. km/sec

The TANGENTIAL velocity at 2:19 = 0.000E+00 km/sec

The TOTAL velocity at 2:19 = 394. km/sec

The TANGENTIAL velocity at 2:21 = 0.000E+00 km/sec

The TOTAL velocity at 2:21 = 394. km/sec

The TANGENTIAL velocity at 2:25 = 0.000E+00 km/sec

The TOTAL velocity at 2:25 = 394. km/sec

The TANGENTIAL velocity at 2:27 = 0.000E+00 km/sec

The TOTAL velocity at 2:27 = 394. km/sec

The TANGENTIAL velocity at 2:29 = 0.000E+00 km/sec

The TOTAL velocity at 2:29 = 394. km/sec

The TANGENTIAL velocity at 2:30 = 0.000E+00 km/sec

The TOTAL velocity at 2:30 = 394. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.26

Standard Deviation in start time measurement = 0.696E+01

Error in time = 0.29476E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.143E-02

Reduced Chi Squared = 0.690E-02

Chi Squared = 0.414E-01

The probability for exceeding chi square = 0.100E+01

The correlation coefficient =  $0.989E+00$

The probability that no LINEAR correlation exists between the variables =  $0.3275E-05$

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

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

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

year	day	time	radii	radius	error in	angle	error in	angle	datatype
1980	224	2:11:3	3.36	+/- 0.10	151.5	+/- 1.0	SMM		
1980	224	2:12:38	3.41	+/- 0.10	151.5	+/- 1.0	SMM		
1980	224	2:19:16	3.67	+/- 0.10	151.5	+/- 1.0	SMM		
1980	224	2:21:27	3.62	+/- 0.10	151.5	+/- 1.0	SMM		
1980	224	2:25:51	3.87	+/- 0.10	151.5	+/- 1.0	SMM		
1980	224	2:27:25	3.92	+/- 0.10	151.5	+/- 1.0	SMM		
1980	224	2:29:6	3.99	+/- 0.10	151.5	+/- 1.0	SMM		
1980	224	2:30:48	4.01	+/- 0.10	151.5	+/- 1.0	SMM		

\*\*\*\*\*  
Structure being measured:  
Bright Feature >South Edge of Prominence  
\*\*\*\*\*

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

START TIME:

tstart=DOY223 24:59 from derivative = 0  
Event begins at 2.28 Solar Radii  
Origin defined at DOY224 2: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.801E-01 +/- 0.151E+00 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

- c(1) = 0.306E+01 +/- 0.155E+00 [solar radii]
- c(2) = 0.254E-01 +/- 0.163E-01 [radii/min]
- c(2) = 0.294E+03 +/- 0.189E+03 [km/sec]
- c(3) = 0.207E-03 +/- 0.389E-03 [radii/min\*\*2]
- c(3) = 0.801E-01 +/- 0.151E+00 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

- Approximate error in c(1) = 0.16995E+00 [radii] Bevington pg 154 (8-30)
- Exact error in c(1) = 0.98993E-02 [radii] Bevington pg 154 (8-28)
- Approximate error in c(2) = 0.17828E-01 [radii/min] Bevington pg 154 (8-30)
- Exact error in c(2) = 0.11692E-02 [radii/min] Bevington pg 154 (8-28)
- Approximate error in c(3) = 0.42645E-03 [radii/min\*\*] Bevington pg 154 (8-30)

Exact error in c(3) = 0.31100E-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) = 152. +/- 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 2:11 = 0.000E+00 km/sec

The TOTAL velocity at 2:11 = 347. km/sec

The TANGENTIAL velocity at 2:12 = 0.000E+00 km/sec

The TOTAL velocity at 2:12 = 355. km/sec

The TANGENTIAL velocity at 2:19 = 0.000E+00 km/sec

The TOTAL velocity at 2:19 = 387. km/sec

The TANGENTIAL velocity at 2:21 = 0.000E+00 km/sec

The TOTAL velocity at 2:21 = 397. km/sec

The TANGENTIAL velocity at 2:25 = 0.000E+00 km/sec

The TOTAL velocity at 2:25 = 419. km/sec

The TANGENTIAL velocity at 2:27 = 0.000E+00 km/sec

The TOTAL velocity at 2:27 = 426. km/sec

The TANGENTIAL velocity at 2:29 = 0.000E+00 km/sec

The TOTAL velocity at 2:29 = 434. km/sec

The TANGENTIAL velocity at 2:30 = 0.000E+00 km/sec

The TOTAL velocity at 2:30 = 442. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.26

Standard Deviation in start time measurement = 0.696E+01

Value of reduced Chi Squared returned from nllst2 = 0.160E-02

Reduced Chi Squared = 0.804E-02

Chi Squared = 0.402E-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 = 0.9890E+00

The correlation between the data and the time\*\*2 term = 0.9852E+00

The correlation between the data and the complete equation of motion = 0.9790E+00

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