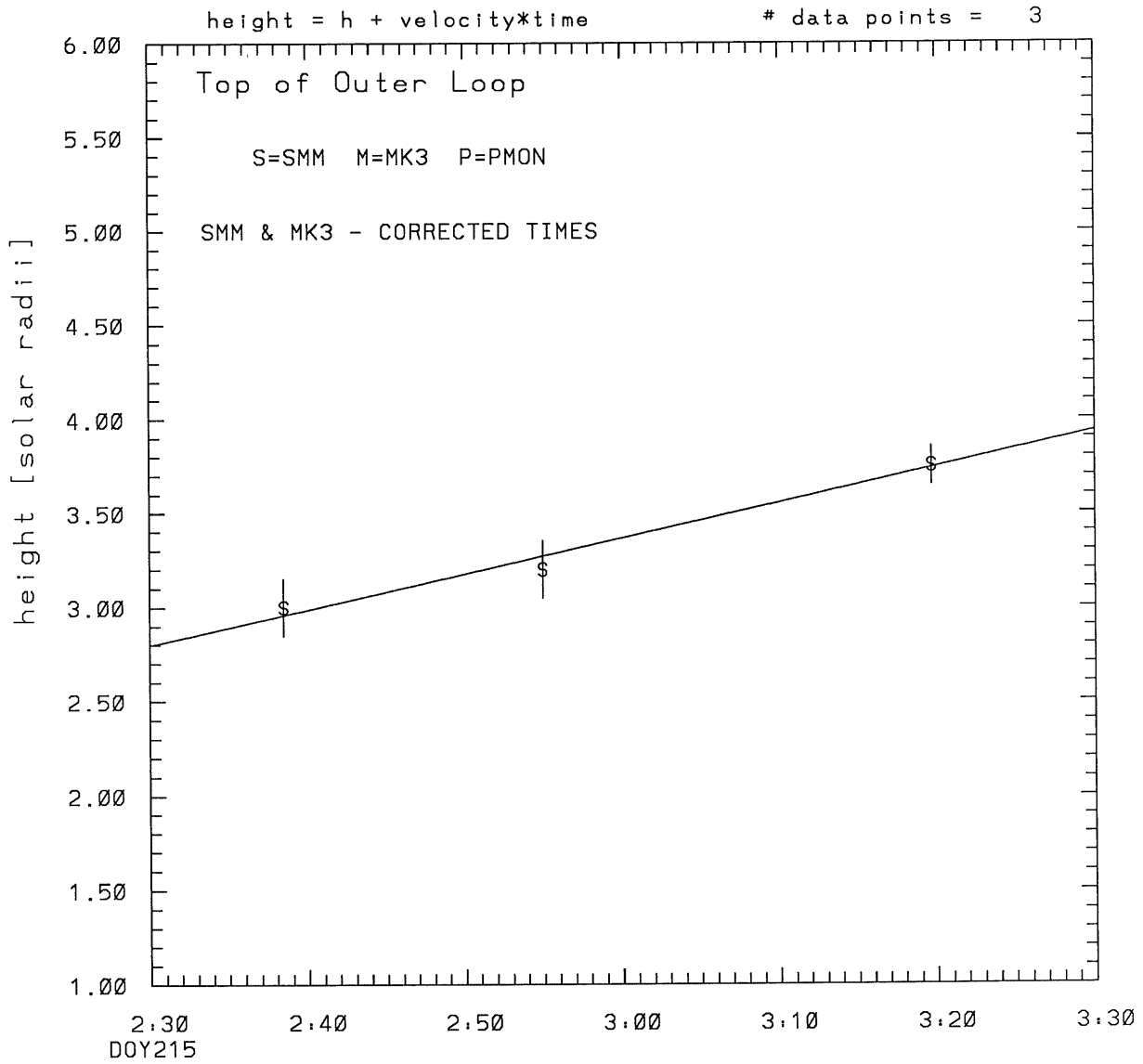
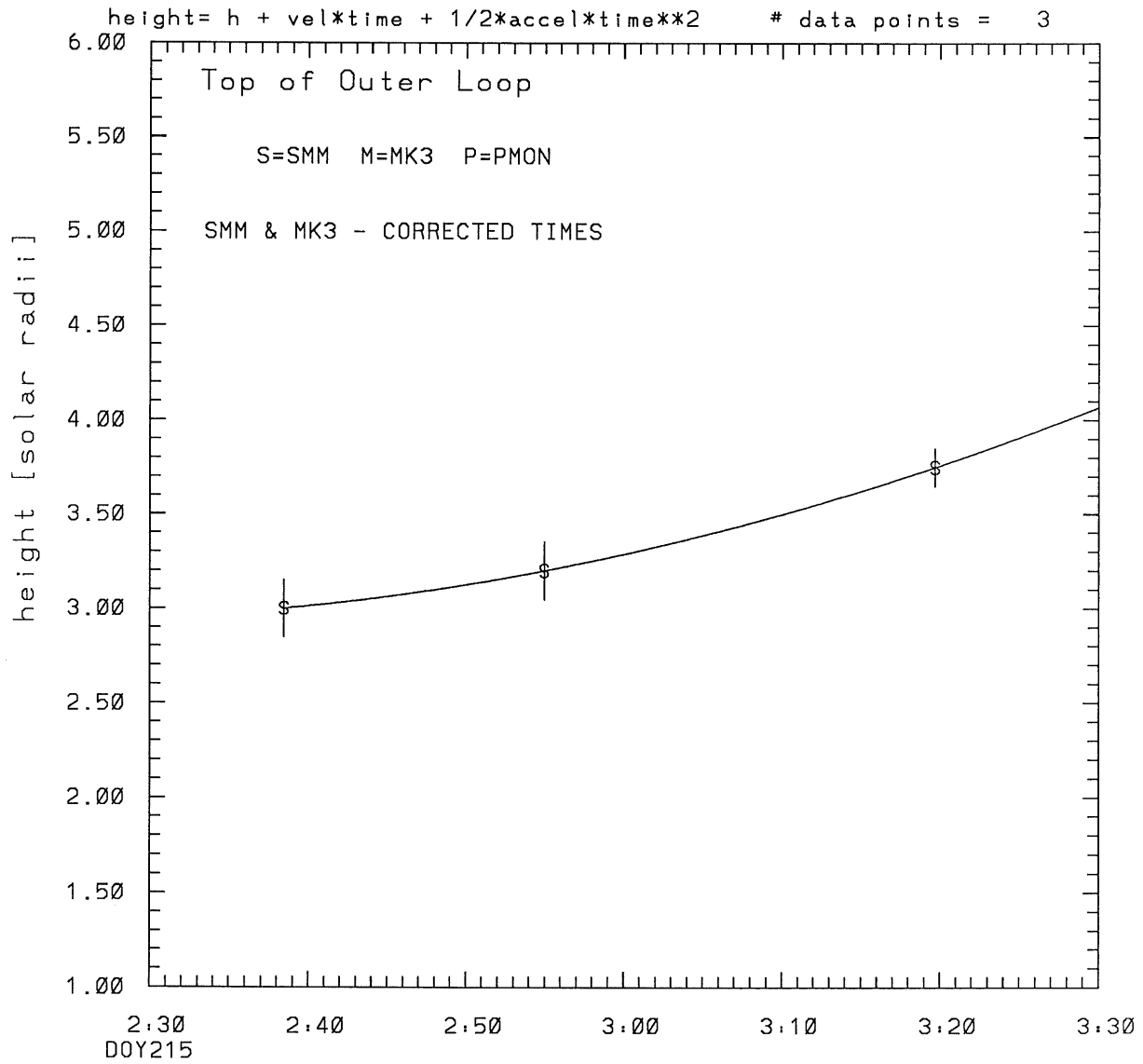


SMM C/P 1989 DOY215 340 +/- 0 degrees



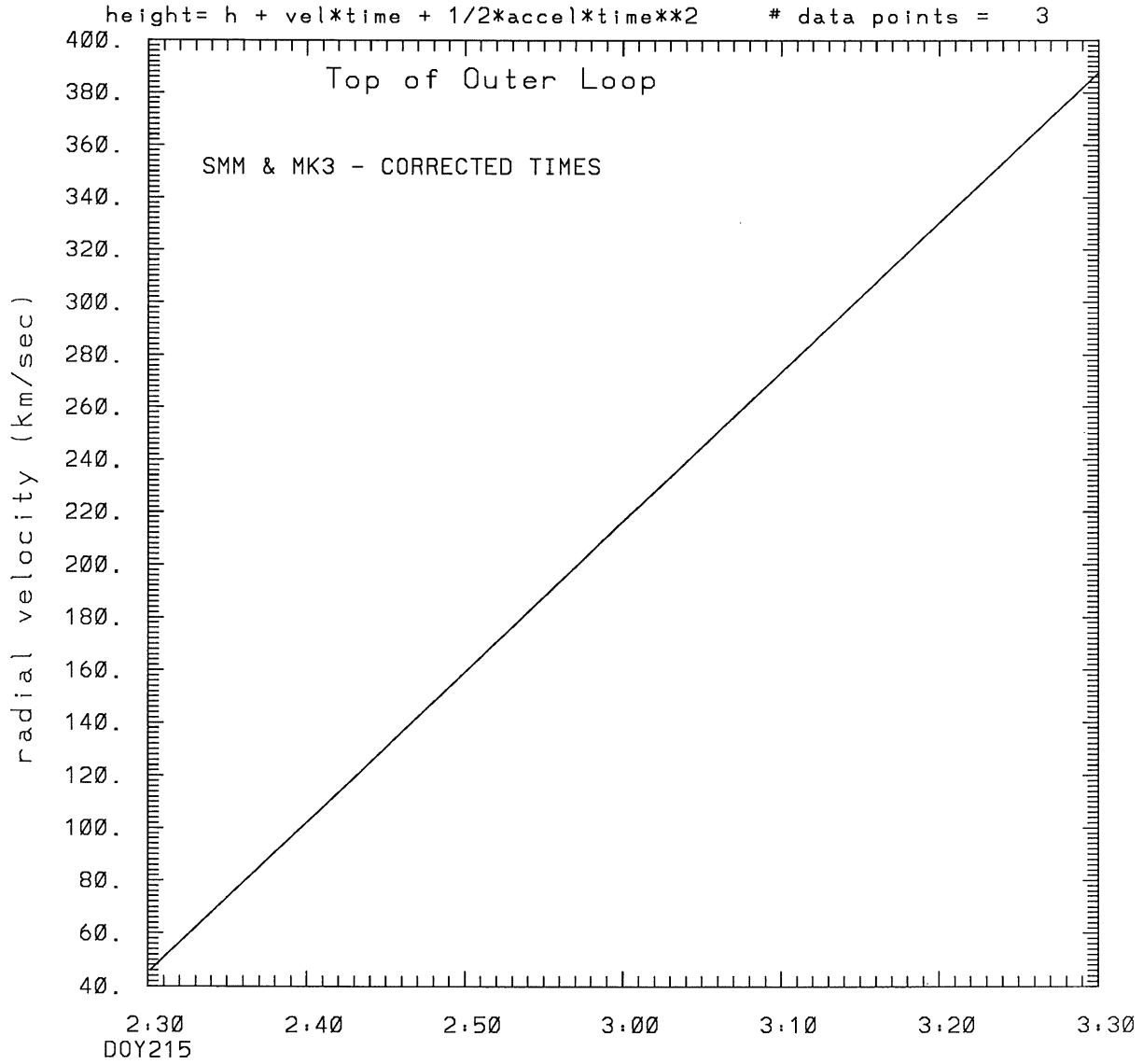
tstart=DOY215 0:55 +/- 5.4 [min.]
radial velocity= 219. +/- 19. [km/sec]

SMM C/P 1989 DOY215 340 +/- 0 degrees



tstart=DOY215 2.23 from derivative=0
Event begins at 2.93 Solar Radii
radial acceleration = 0.0951 +/- 0.0000 [km/sec**2]

SMM C/P 1989 DOY215 340 +/- 0 degrees



tstart=DOY215 2:23 from derivative=0
Event begins at 2.93 Solar Radii
radial acceleration=0.951E-01 km/sec**2

This is a 1 order run

INPUT:

year	doy	time	radii	error in radius	angle	error in angle	datatype
1989	215	2:38:27	3.00	+/- 0.15	340.0	+/- 1.0	SMM
1989	215	2:54:58	3.20	+/- 0.15	340.0	+/- 1.0	SMM
1989	215	3:19:41	3.75	+/- 0.10	340.0	+/- 1.0	SMM

Structure being measured:

Top of Outer Loop

OUTPUT:

START TIME:

Event began at $t = 0 + -0.951E+02 +/- 0.535E+01$ [minutes]

In more convenient units:

Event began at DOY 215 0:55 +/- 0.535E+01 [minutes]

Origin defined at DOY215 2:30

RADIAL INFORMATION:

RADIAL VELOCITY = 219. +/- 19. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.280E+01 +/- 0.634E-01$ [solar radii]
 $c(2) = 0.189E-01 +/- 0.165E-02$ [radii/min]
 $c(2) = 0.219E+03 +/- 0.192E+02$ [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 $c(1) = 0.91601E-01$ [radii] see Bevington pg. 114

error in $c(2) = 0.28210E-02$ [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) = 340. +/- 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 2:38 = 0. km/sec

The TOTAL velocity at 2:38 = 219. km/sec

The TANGENTIAL velocity at 2:54 = 0. km/sec

The TOTAL velocity at 2:54 = 219. km/sec

The TANGENTIAL velocity at 3:19 = 0. km/sec

The TOTAL velocity at 3:19 = 219. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.39

Standard Deviation in start time measurement = 0.169E+02

Error in time = 0.43789E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.249E-02

Reduced Chi Squared = 0.121E-01

Chi Squared = 0.121E-01

The probability for exceeding chi square = 0.960E+00

The correlation coefficient = 0.989E+00

The probability that no LINEAR correlation exists between the variables = 0.9478E-01

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

This is a 2 order run

INPUT:

year	doy	time	radii	radius	error in	angle	error in	angle	datatype
1989	215	2:38:27	3.00	+/- 0.15	340.0	+/- 1.0			SMM
1989	215	2:54:58	3.20	+/- 0.15	340.0	+/- 1.0			SMM
1989	215	3:19:41	3.75	+/- 0.10	340.0	+/- 1.0			SMM

Structure being measured:

Top of Outer Loop

OUTPUT:

START TIME:

tstart=DOY215 2:23 from derivative = 0

Event begins at 2.93 Solar Radii

Origin defined at DOY215 2:30

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.951E-01 +/- 0.173E-05 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.295E+01 +/- 0.320E-05 [solar radii]
c(2) = 0.389E-02 +/- 0.277E-06 [radii/min]
c(2) = 0.451E+02 +/- 0.321E-02 [km/sec]
c(3) = 0.246E-03 +/- 0.448E-08 [radii/min**2]
c(3) = 0.951E-01 +/- 0.173E-05 [km/sec**2]

ANGULAR INFORMATION:

ANGULAR ACCELERATION= 0.0000E+00 +/- 0.0000E+00[radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 340. +/- 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 2:38 = 0. km/sec

The TOTAL velocity at 2:38 = 93. km/sec

The TANGENTIAL velocity at 2:54 = 0. km/sec

The TOTAL velocity at 2:54 = 188. km/sec

The TANGENTIAL velocity at 3:19 = 0. km/sec

The TOTAL velocity at 3:19 = 329. km/sec

The following info is for estimating goodness of the fit

Number data points = number of coefficients. No error analysis is possible.

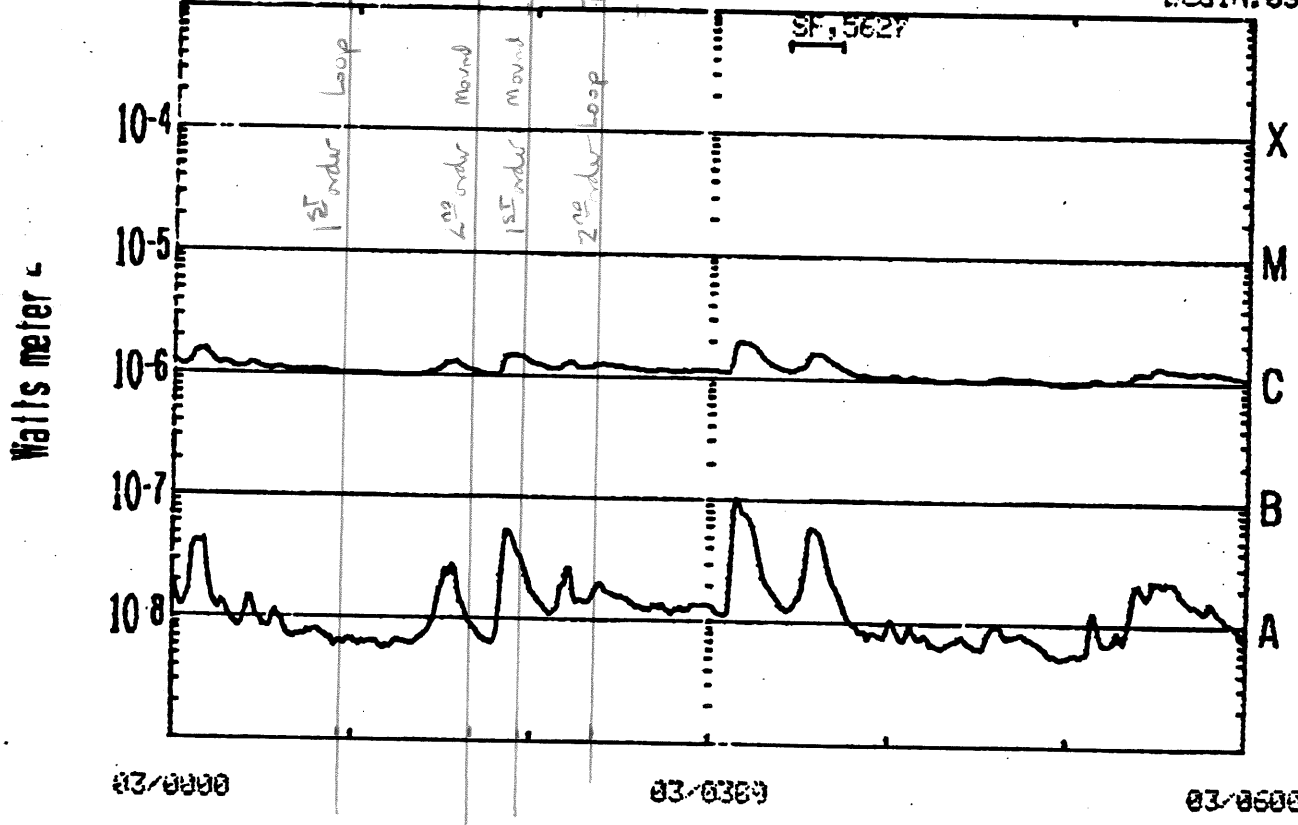
Correlation coefficient is not computable!

1989 Day 215

RAY and OPTICAL DATA TOGETHER

STOP Ret..

BEGIN: 03 AUG 89



GOES 7 0.5-4.0A OPTICAL FLARES
GOES 7 1.0-8.0A

GOES-7 1 MIN DATA: OPTICAL FLARE DUR, IMP, REGION

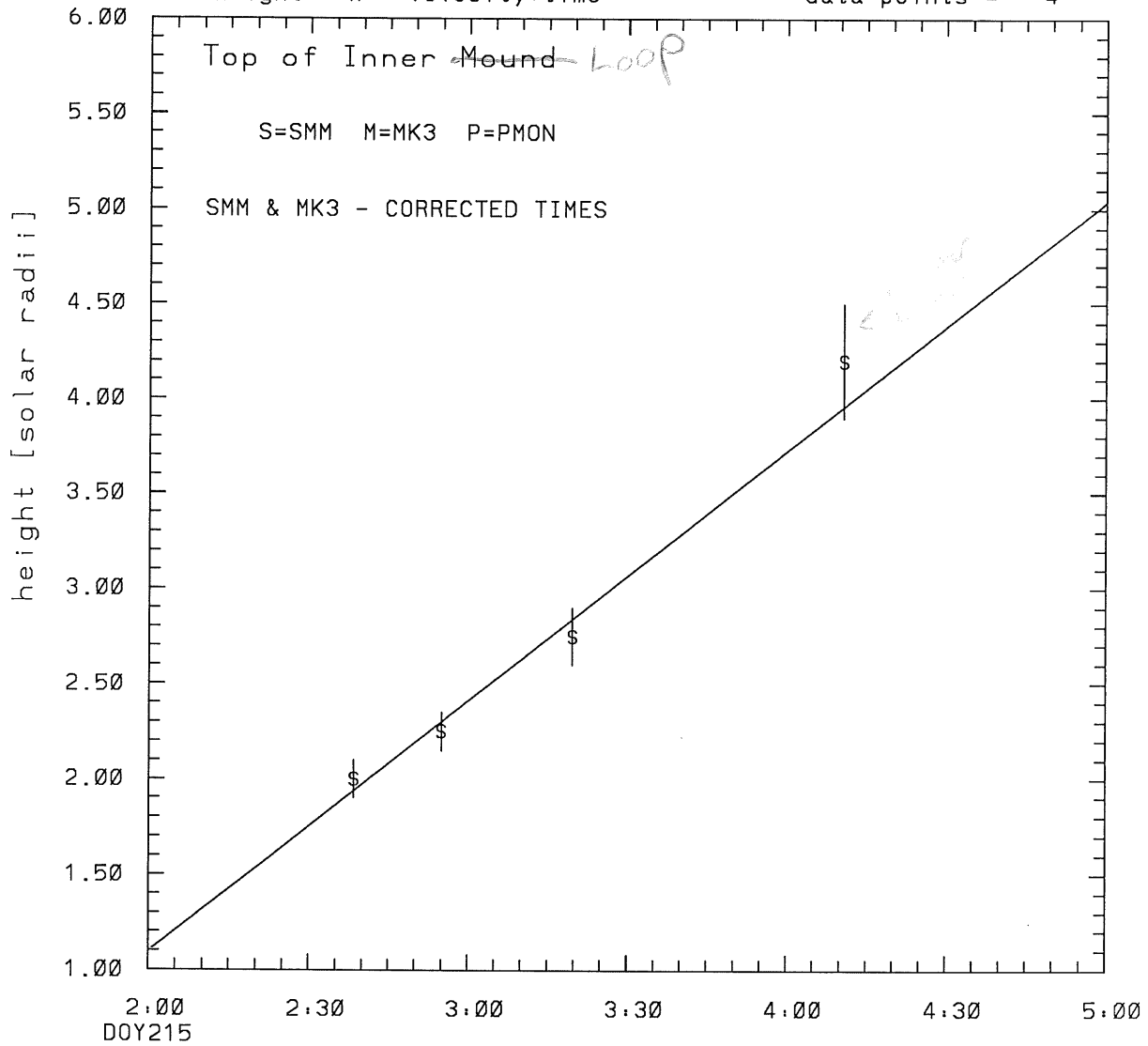
SAA's NIGHT

RUN: 1978UT
4 AUG 89

SMM C/P 1989 DOY215 335 +/- 0 degrees

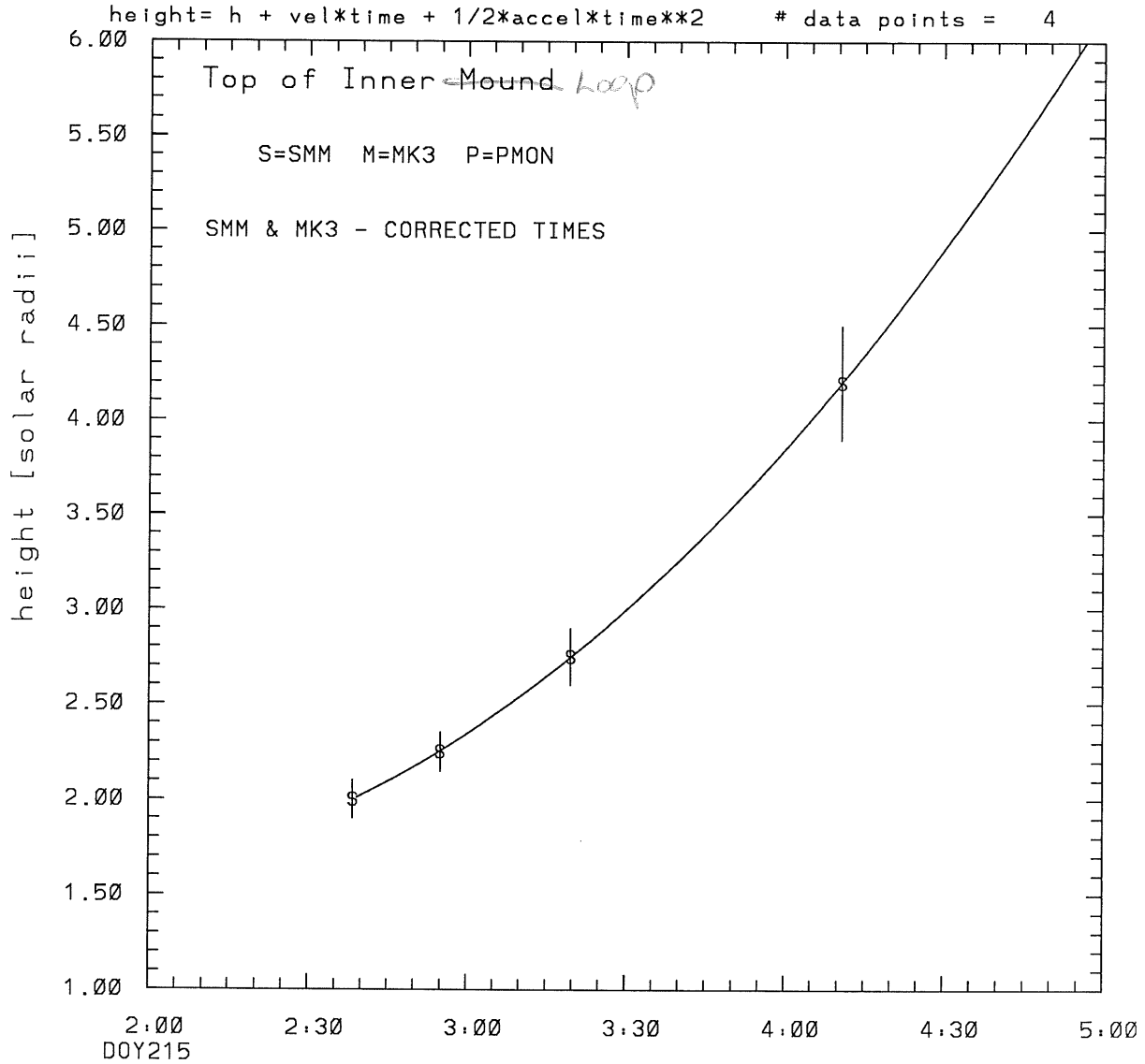
height = h + velocity*time

data points = 4



tstart=DOY215 1.56 +/- 0.4 [min.]
radial velocity= 254. +/- 25. [km/sec]

SMM C/P 1989 DOY215 335 +/- 0 degrees

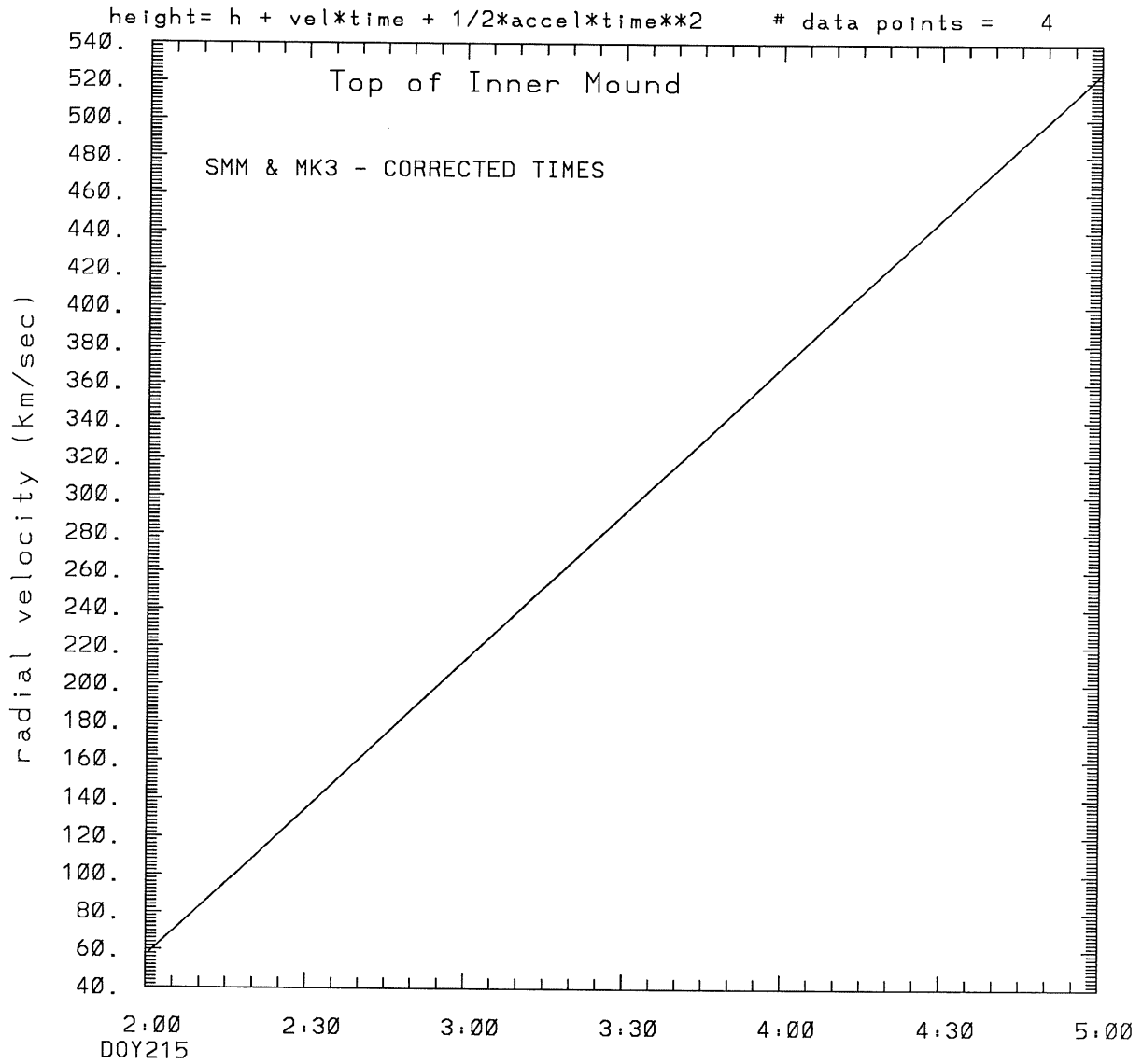


tstart=DOY215 1.39 from derivative=0

Event begins at 1.59 Solar Radii

radial acceleration = 0.0434 ± 0.0009 [km/sec**2]

SMM C/P 1989 DOY215 335 +/- 0 degrees



tstart=DOY215 1:39 from derivative=0
Event begins at 1.59 Solar Radii
radial acceleration=0.434E-01 km/sec**2

This is a 1 order run

INPUT:

year	doy	time	radii	error in radius	angle	error in angle	datatype
1989	215	2:38:27	2.00	+/- 0.10	335.0	+/- 0.5	SMM
1989	215	2:54:58	2.25	+/- 0.10	335.0	+/- 0.5	SMM
1989	215	3:19:41	2.75	+/- 0.15	335.0	+/- 0.5	SMM
1989	215	4:10:46	4.20	+/- 0.30	335.0	+/- 1.0	SMM

Structure being measured:
Top of Inner Mound *Loop*

OUTPUT:

START TIME:

Event began at $t = 0 + -0.435E+01 +/- 0.435E+00$ [minutes]
In more convenient units:
Event began at DOY 215 1:56 +/- 0.435E+00 [minutes]

Origin defined at DOY215 2: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 254. +/- 25. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.110E+01 +/- 0.129E+00$ [solar radii]
 $c(2) = 0.219E-01 +/- 0.215E-02$ [radii/min]
 $c(2) = 0.254E+03 +/- 0.250E+02$ [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 $c(1) = 0.22813E+00$ [radii] see Bevington pg. 114
error in $c(2) = 0.27291E-02$ [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) = 335. +/- 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 2:38 = 0. km/sec
The TOTAL velocity at 2:38 = 254. km/sec

The TANGENTIAL velocity at 2:54 = 0. km/sec
The TOTAL velocity at 2:54 = 254. km/sec

The TANGENTIAL velocity at 3:19 = 0. km/sec
The TOTAL velocity at 3:19 = 254. km/sec

The TANGENTIAL velocity at 4:10 = 0. km/sec
The TOTAL velocity at 4:10 = 254. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.98
Standard Deviation in start time measurement = 0.349E+02
Error in time = 0.12292E+02 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.856E-02
Reduced Chi Squared = 0.133E+00
Chi Squared = 0.265E+00
The probability for exceeding chi square = 0.991E+00

The correlation coefficient = 0.993E+00
The probability that no LINEAR correlation exists between the variables = 0.6631E-02
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	datatype
1989	215	2:38:27	2.00	+/- 0.10	335.0	+/- 0.5		SMM
1989	215	2:54:58	2.25	+/- 0.10	335.0	+/- 0.5		SMM
1989	215	3:19:41	2.75	+/- 0.15	335.0	+/- 0.5		SMM
1989	215	4:10:46	4.20	+/- 0.30	335.0	+/- 1.0		SMM

Structure being measured:

Top of Inner Mound

OUTPUT:

START TIME:

tstart=DOY215 1:39 from derivative = 0

Event begins at 1.59 Solar Radii

Origin defined at DOY215 2: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.434E-01 +/- 0.881E-03 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.164E+01 +/- 0.121E-01 [solar radii]
c(2) = 0.489E-02 +/- 0.354E-03 [radii/min]
c(2) = 0.567E+02 +/- 0.410E+01 [km/sec]
c(3) = 0.112E-03 +/- 0.228E-05 [radii/min**2]
c(3) = 0.434E-01 +/- 0.881E-03 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.17838E-01 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.77288E-02 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.47918E-03 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.23892E-03 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.27405E-05 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.14088E-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) = 335. +/- 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 2:38 = 0. km/sec

The TOTAL velocity at 2:38 = 157. km/sec

The TANGENTIAL velocity at 2:54 = 0. km/sec

The TOTAL velocity at 2:54 = 200. km/sec

The TANGENTIAL velocity at 3:19 = 0. km/sec

The TOTAL velocity at 3:19 = 264. km/sec

The TANGENTIAL velocity at 4:10 = 0. km/sec

The TOTAL velocity at 4:10 = 397. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.98

Standard Deviation in start time measurement = 0.349E+02

Value of reduced Chi Squared returned from nllst2 = 0.106E-04

Reduced Chi Squared = 0.645E-04

Chi Squared = 0.645E-04

The probability for exceeding chi square = 0.997E+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 = 0.8323E+00

The correlation between the data and the time**2 term = 0.7782E+00

The correlation between the data and the complete equation of motion = 0.1000E+01

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