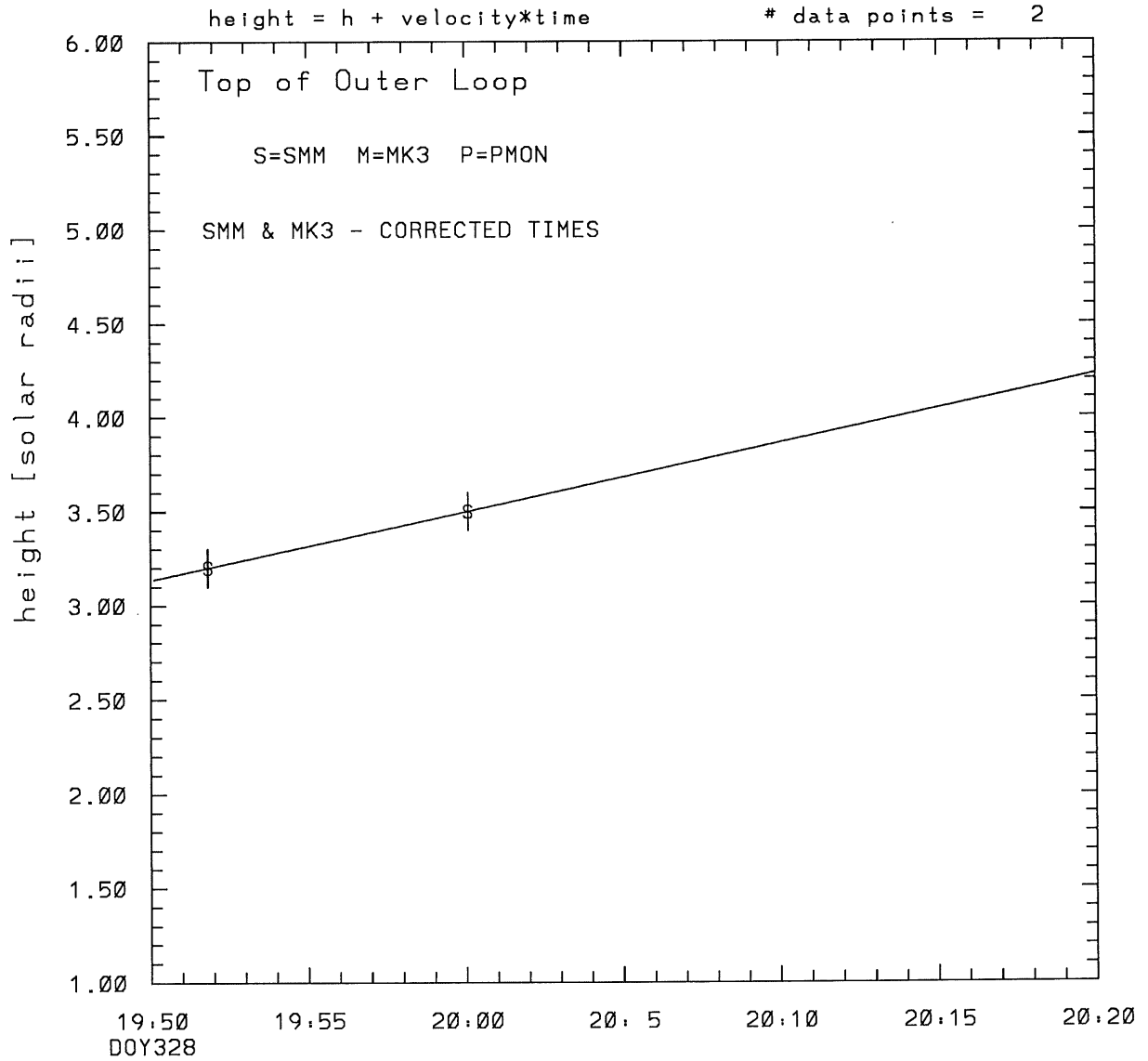


SMM C/P 1987 DOY328 60 +/- 0 degrees



tstart=DOY328 18:53 +/- 0.0 [min.]  
radial velocity= 422. +/- 0. [km/sec]

\*\*\*\*\*

This is a 1 order run

\*\*\*\*\*

\*\*\*\*\*

INPUT:

\*\*\*\*\*

year	day	time	radii	error in radius	angle	error in angle	datatype
1987	328	19:51:49	3.20	+/- 0.10	60.0	+/- 1.0	SMM
1987	328	20: 0: 4	3.50	+/- 0.10	60.0	+/- 1.0	SMM

\*\*\*\*\*

Structure being measured:

Top of Outer Loop

\*\*\*\*\*

\*\*\*\*\*

OUTPUT:

\*\*\*\*\*

START TIME:

Event began at t = 0 + -0.587E+02 +/- 0.000E+00 [minutes]

In more convenient units:

Event began at DOY 328 18:53 +/- 0.000E+00 [minutes]

Origin defined at DOY328 19:50

RADIAL INFORMATION:

RADIAL VELOCITY = 422. +/- 0. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.313E+01 +/- 0.000E+00 [solar radii]  
c(2) = 0.364E-01 +/- 0.000E+00 [radii/min]  
c(2) = 0.422E+03 +/- 0.000E+00 [km/sec]  
c(3) = 0.000E+00 +/- 0.000E+00 [radii/min\*\*2]  
c(3) = 0.000E+00 +/- 0.000E+00 [km/sec\*\*2]

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.0000E+00 +/- 0.0000E+00[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 60. +/- 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 19:51 = 0.000E+00 km/sec

The TOTAL velocity at 19:51 = 422. km/sec

The TANGENTIAL velocity at 20: 0 = 0.000E+00 km/sec

The TOTAL velocity at 20: 0 = 422. km/sec

\*\*\*\*\*

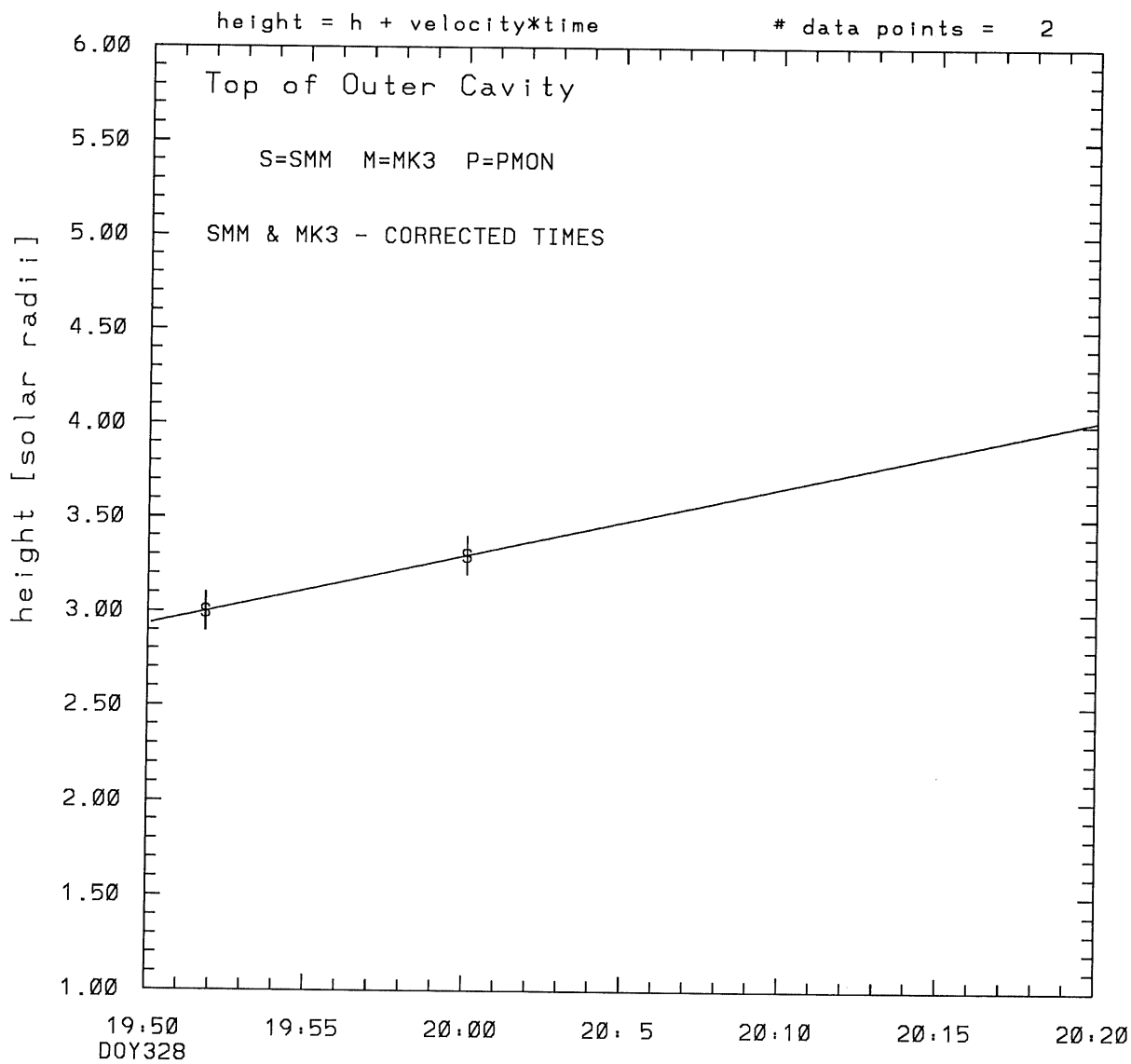
The following info is for estimating goodness of the fit

\*\*\*\*\*

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

Correlation coefficient is not computable!

SMM C/P 1987 DOY328 60 +/- 0 degrees



tstart=DOY328 18:57 +/- 0.0 [min.]  
radial velocity= 422. +/- 0. [km/sec]

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

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

year	doy	time	radii	error in radius	error in angle	angle	datatype
1987	328	19:51:49	3.00	+/- 0.10	60.0	+/- 1.0	SMM
1987	328	20: 0: 4	3.30	+/- 0.10	60.0	+/- 1.0	SMM

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

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

START TIME:

Event began at t = 0 + -0.532E+02 +/- 0.000E+00 [minutes]  
In more convenient units:  
Event began at DOY 328 18:57 +/- 0.000E+00 [minutes]

Origin defined at DOY328 19:50

RADIAL INFORMATION:

RADIAL VELOCITY = 422. +/- 0. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

- c(1) = 0.293E+01 +/- 0.296E-06 [solar radii]
- c(2) = 0.364E-01 +/- 0.409E-07 [radii/min]
- c(2) = 0.422E+03 +/- 0.474E-03 [km/sec]
- c(3) = 0.000E+00 +/- 0.000E+00 [radii/min\*\*2]
- c(3) = 0.000E+00 +/- 0.000E+00 [km/sec\*\*2]

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.0000E+00 +/- 0.0000E+00[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

- a(1) = 60. +/- 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 19:51 = 0.000E+00 km/sec

The TOTAL velocity at 19:51 = 422. km/sec

The TANGENTIAL velocity at 20: 0 = 0.000E+00 km/sec

The TOTAL velocity at 20: 0 = 422. km/sec

\*\*\*\*\*

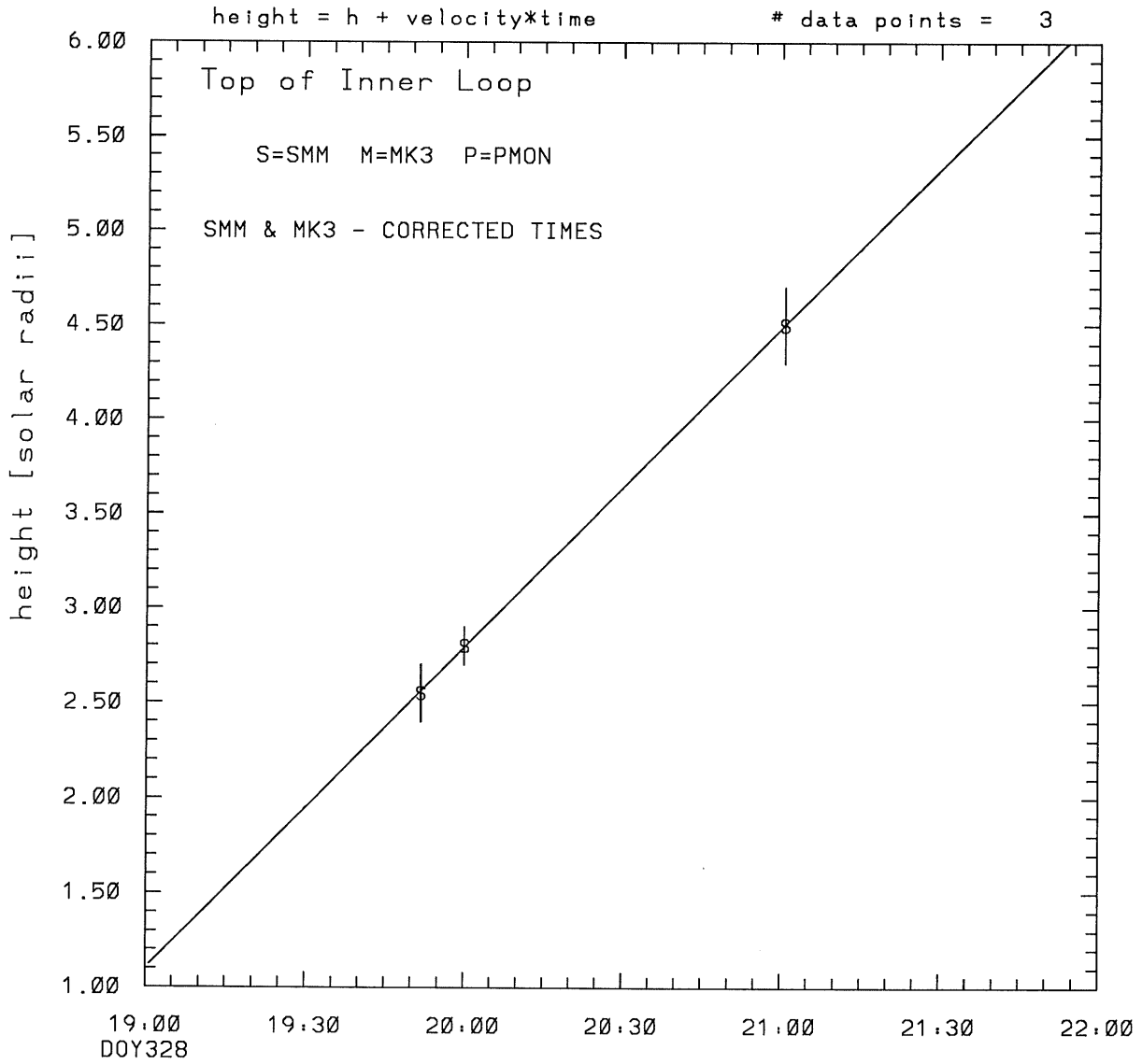
The following info is for estimating goodness of the fit

\*\*\*\*\*

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

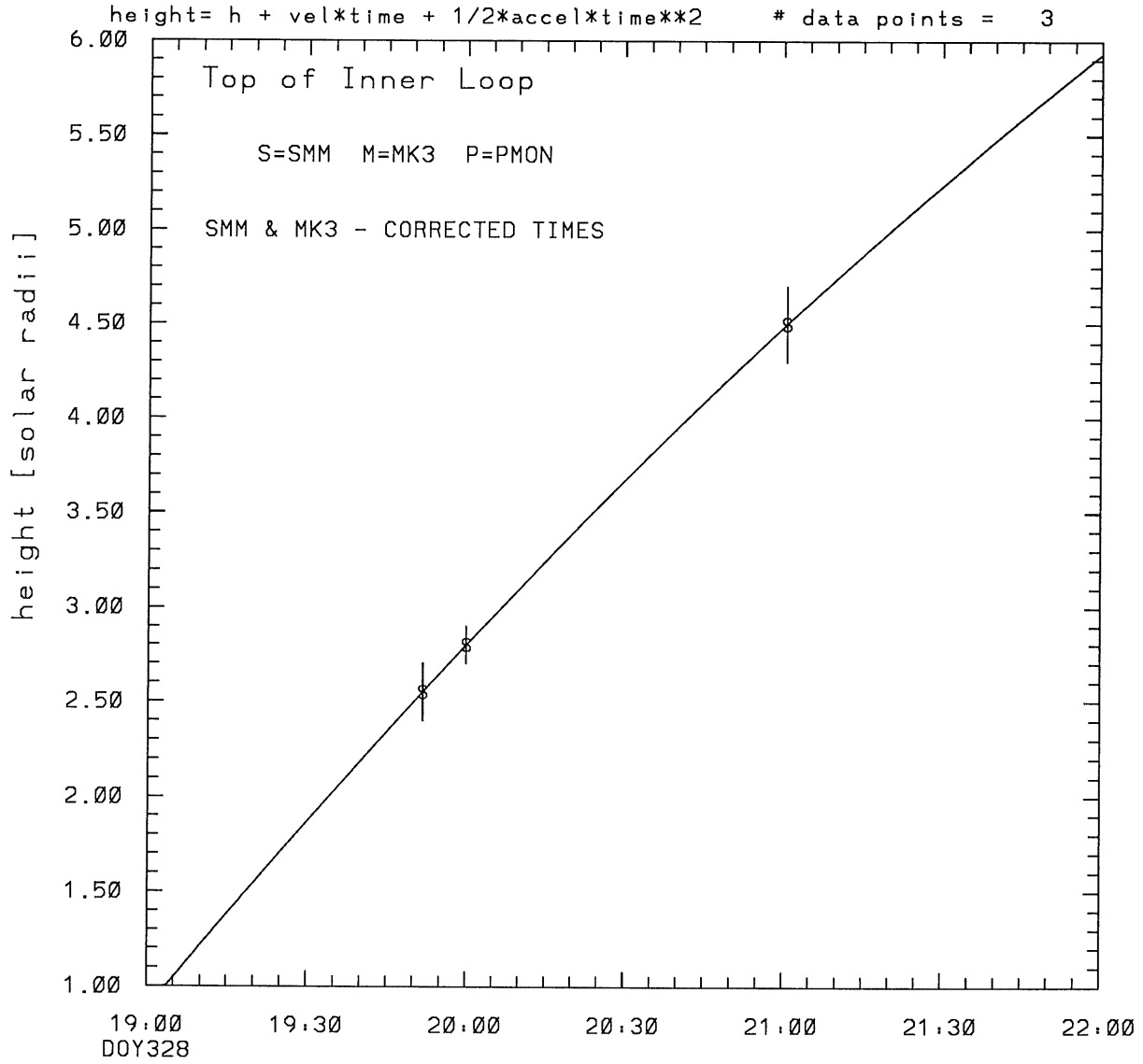
Correlation coefficient is not computable!

SMM C/P 1987 DOY328 60 +/- 0 degrees



tstart=DOY328 18:58 +/- 0.0 [min.]  
radial velocity= 327. +/- 3. [km/sec]

SMM C/P 1987 DOY328 60 +/- 0 degrees

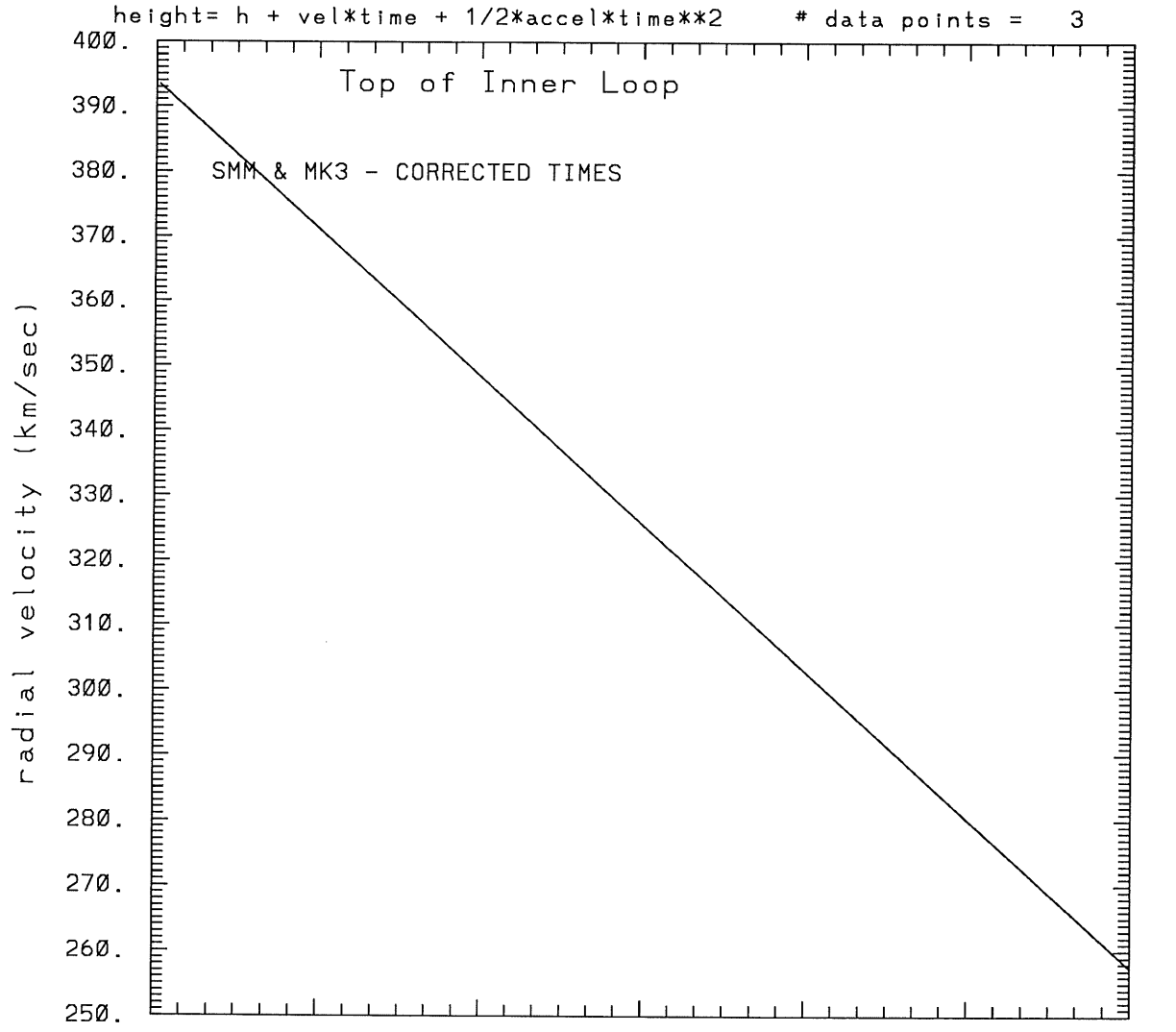


tstart=DOY328 19: 4 +/- 0.0 [min.]

radial acceleration = -0.0126 +/- 0.0000 [km/sec\*\*2]



SMM C/P 1987 DOY328 60 +/- 0 degrees



19:00  
DOY328

19:30 20:00 20:30 21:00 21:30 22:00  
tstart=DOY328 19: 4 +/- 0.0 [min.]

radial acceleration =  $-.126E-01$  km/sec\*\*2

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

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

year	day	time	radii	error in radius	angle	error in angle	datatype
1987	328	19:51:49	2.55	+/- 0.15	60.0	+/- 1.0	SMM
1987	328	20: 0: 4	2.80	+/- 0.10	60.0	+/- 1.0	SMM
1987	328	21: 0:40	4.50	+/- 0.20	60.0	+/- 1.0	SMM

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

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

START TIME:

Event began at  $t = 0 + -0.357E+01 +/- 0.358E-01$  [minutes]  
In more convenient units:  
Event began at DOY 328 18:58 +/- 0.358E-01 [minutes]

Origin defined at DOY328 19: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 327. +/- 3. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

- $c(1) = 0.110E+01 +/- 0.165E-01$  [solar radii]
- $c(2) = 0.282E-01 +/- 0.234E-03$  [radii/min]
- $c(2) = 0.327E+03 +/- 0.271E+01$  [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  $c(1) = 0.20766E-01$  [radii] see Bevington pg. 114
- error in  $c(2) = 0.24907E-03$  [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) = 60. +/- 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 19:51 = 0.000E+00 km/sec

The TOTAL velocity at 19:51 = 327. km/sec

The TANGENTIAL velocity at 20: 0 = 0.000E+00 km/sec

The TOTAL velocity at 20: 0 = 327. km/sec

The TANGENTIAL velocity at 21: 0 = 0.000E+00 km/sec

The TOTAL velocity at 21: 0 = 327. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 1.06

Standard Deviation in start time measurement = 0.307E+02

Error in time = 0.46968E+00 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.844E-04

Reduced Chi Squared = 0.225E-03

Chi Squared = 0.225E-03

The probability for exceeding chi square = 0.993E+00

The correlation coefficient = 0.100E+01

The probability that no LINEAR correlation exists between the variables = 0.5098E-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
1987	328	19:51:49	2.55	+/- 0.15	60.0	+/- 1.0		SMM
1987	328	20: 0: 4	2.80	+/- 0.10	60.0	+/- 1.0		SMM
1987	328	21: 0:40	4.50	+/- 0.20	60.0	+/- 1.0		SMM

\*\*\*\*\*

Structure being measured:

Top of Inner Loop

\*\*\*\*\*

\*\*\*\*\*

OUTPUT:

\*\*\*\*\*

START TIME:

Event began at  $t = 0 + 0.360E+01 \pm 0.000E+00$  [minutes]

In more convenient units:

Event began at DOY 328 19: 4  $\pm 0.000E+00$  [minutes]

Origin defined at DOY328 19: 0

RADIAL INFORMATION:

RADIAL ACCELERATION =  $-0.126E-01 \pm 0.328E-06$  km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) =  $0.878E+00 \pm 0.581E-05$  [solar radii]  
c(2) =  $0.340E-01 \pm 0.150E-06$  [radii/min]  
c(2) =  $0.394E+03 \pm 0.174E-02$  [km/sec]  
c(3) =  $-0.327E-04 \pm 0.848E-09$  [radii/min\*\*2]  
c(3) =  $-0.126E-01 \pm 0.328E-06$  [km/sec\*\*2]

ANGULAR INFORMATION:

ANGULAR ACCELERATION=  $0.0000E+00 \pm 0.0000E+00$ [radians/sec\*\*2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) =  $60. \pm 0.$  [degrees]  
a(2) =  $0.000E+00 \pm 0.000E+00$  [degrees/min]  
a(2) =  $0.000E+00 \pm 0.000E+00$  [rad/sec]  
a(3) =  $0.000E+00 \pm 0.000E+00$  [degrees/min\*\*2]

$$a(3) = 0.000E+00 \text{ +/- } 0.000E+00 \text{ [rad/sec**2]}$$

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:

The TANGENTIAL velocity at 19:51 = 0.000E+00 km/sec

The TOTAL velocity at 19:51 = 355. km/sec

The TANGENTIAL velocity at 20: 0 = 0.000E+00 km/sec

The TOTAL velocity at 20: 0 = 348. km/sec

The TANGENTIAL velocity at 21: 0 = 0.000E+00 km/sec

The TOTAL velocity at 21: 0 = 302. km/sec

\*\*\*\*\*

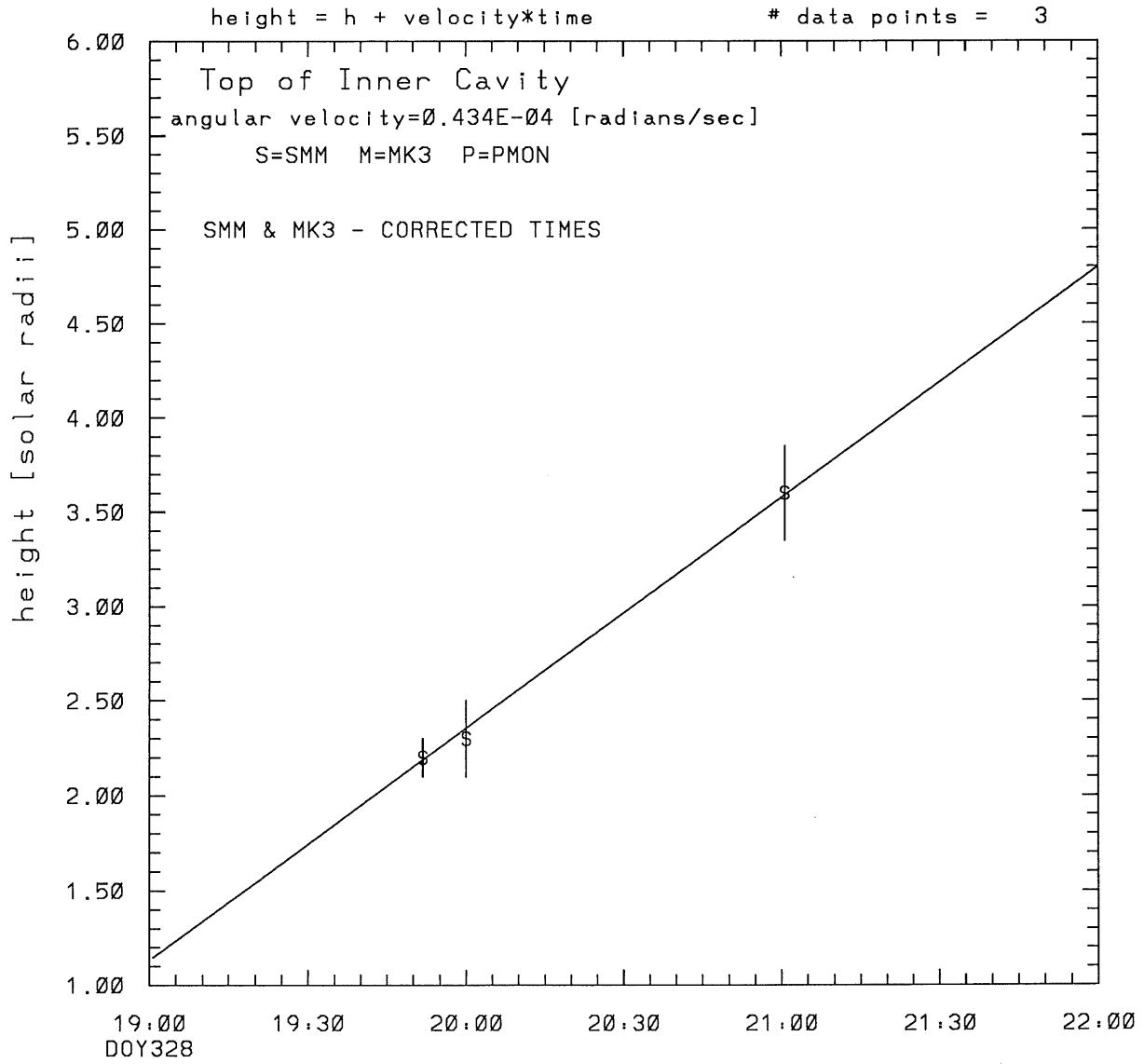
The following info is for estimating goodness of the fit

\*\*\*\*\*

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

Correlation coefficient is not computable!

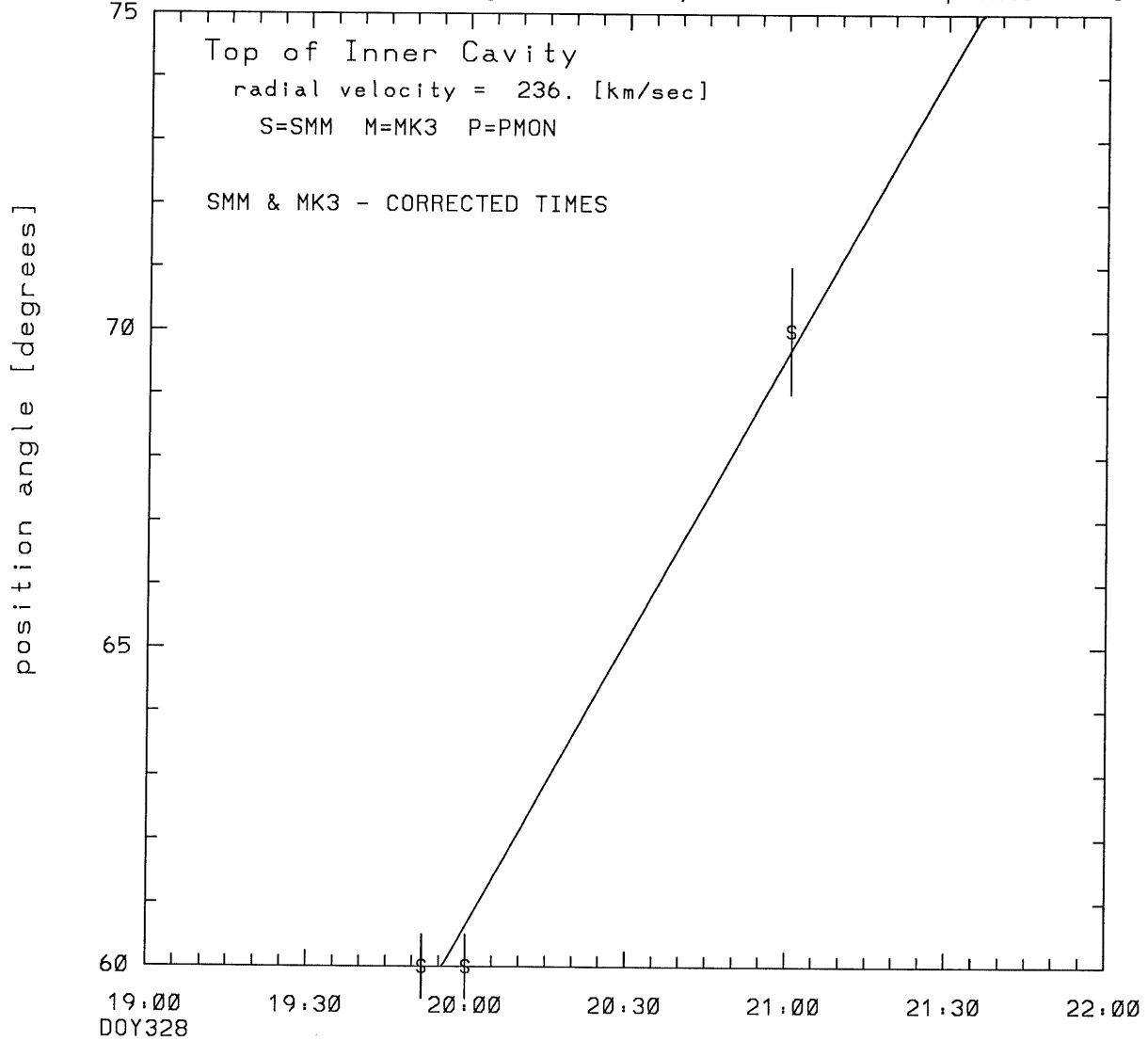
SMM C/P 1987 DOY328 63 +/- 7 degrees



tstart=DOY328 18:55 +/- 0.1 [min.]  
radial velocity= 236. +/- 10. [km/sec]

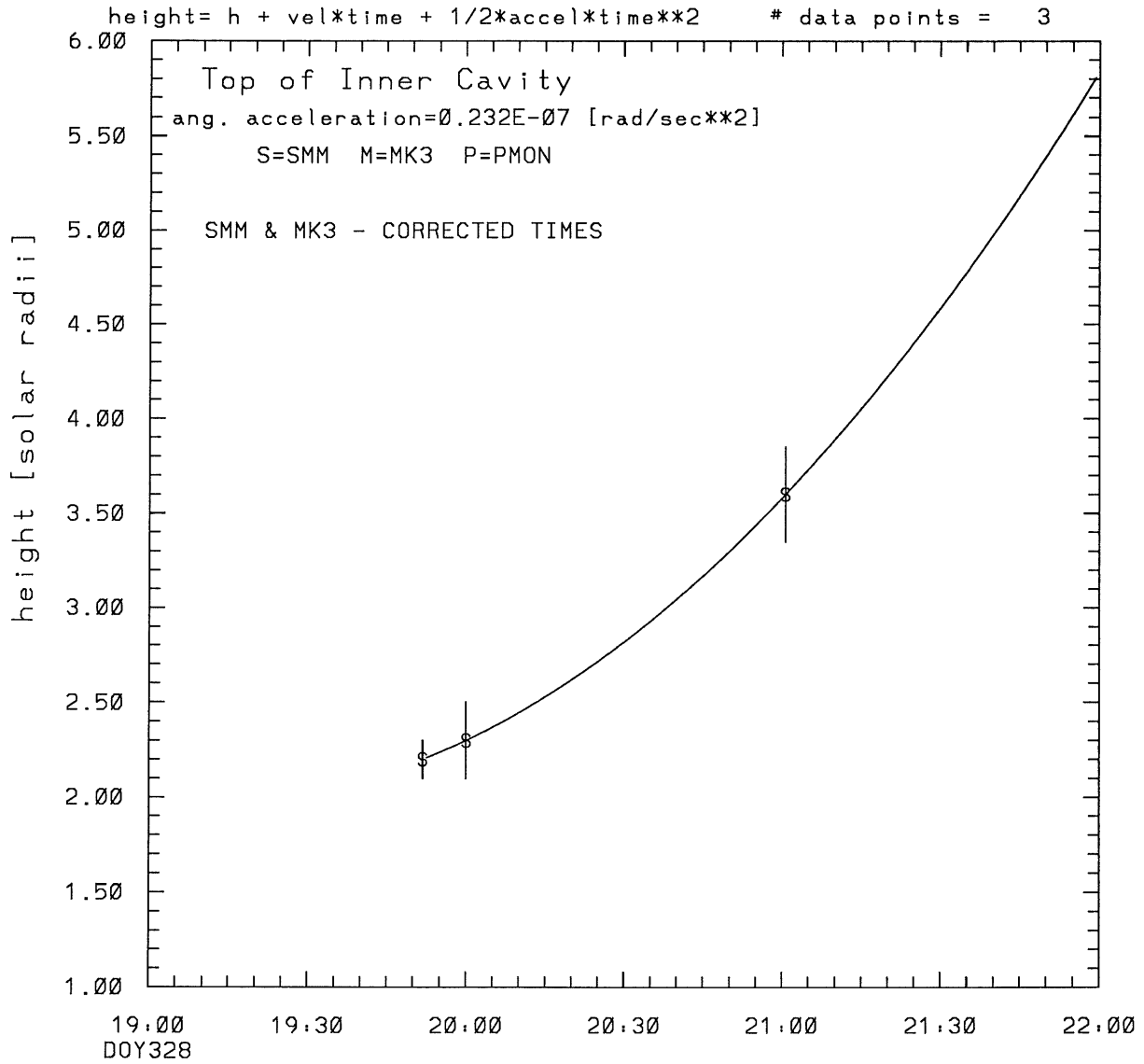
SMM C/P 1987 DOY328 63 +/- 7 degrees

angle = initial angle + angular velocity \* time # data points = 3



tstart=DOY328 18:55 +/- 0.1 [min.]  
angular velocity=0.434E-04 +/- 0.586E-05 [rad/sec]

SMM C/P 1987 DOY328 63 +/- 7 degrees

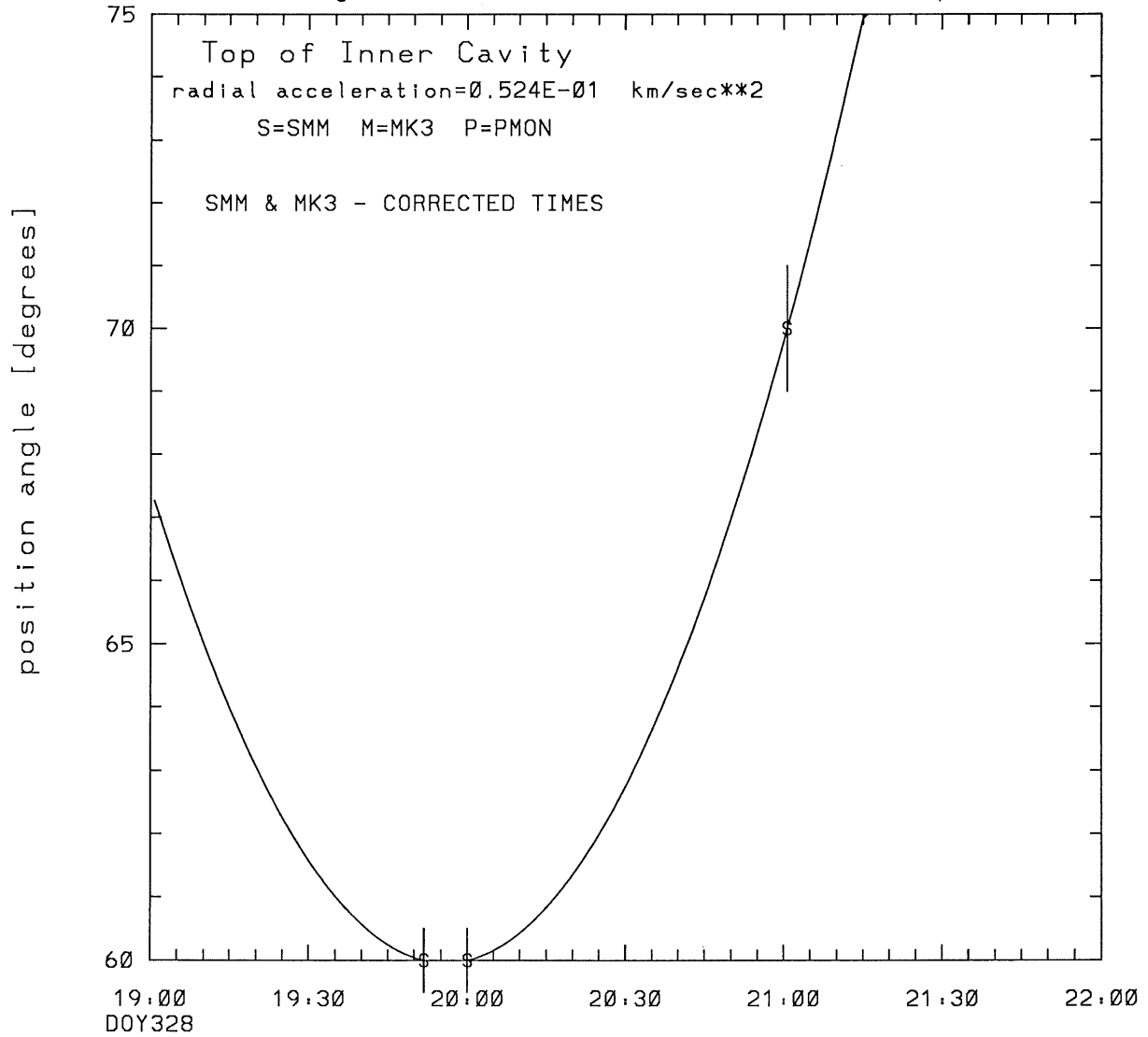


tstart=DOY328 19.11 from derivative=0  
Event begins at 1.98 Solar Radii  
radial acceleration =  $0.0524 +/- 0.0000$  [km/sec\*\*2]



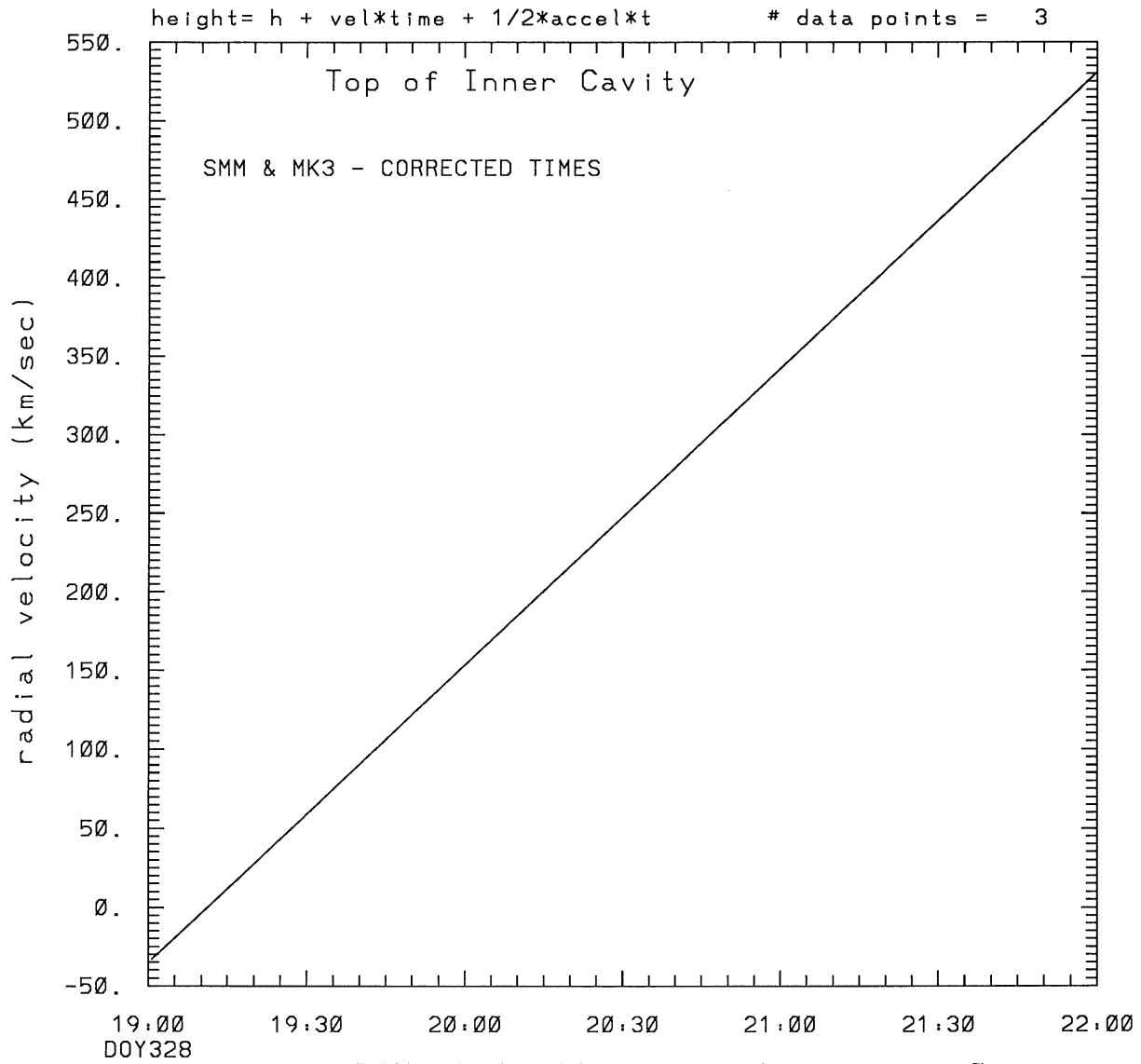
SMM C/P 1987 DOY328 63 +/- 7 degrees

angle = initial angle + angular velocity\*time  
+ 1/2 angular acceleration\*time\*\*2 # data points = 3



tstart=DOY328 19:11 from derivative=0  
angular acceleration=0.232E-07 +/-0.173E-12 [rad/sec\*\*2]

SMM C/P 1987 DOY328 63 +/- 7 degrees

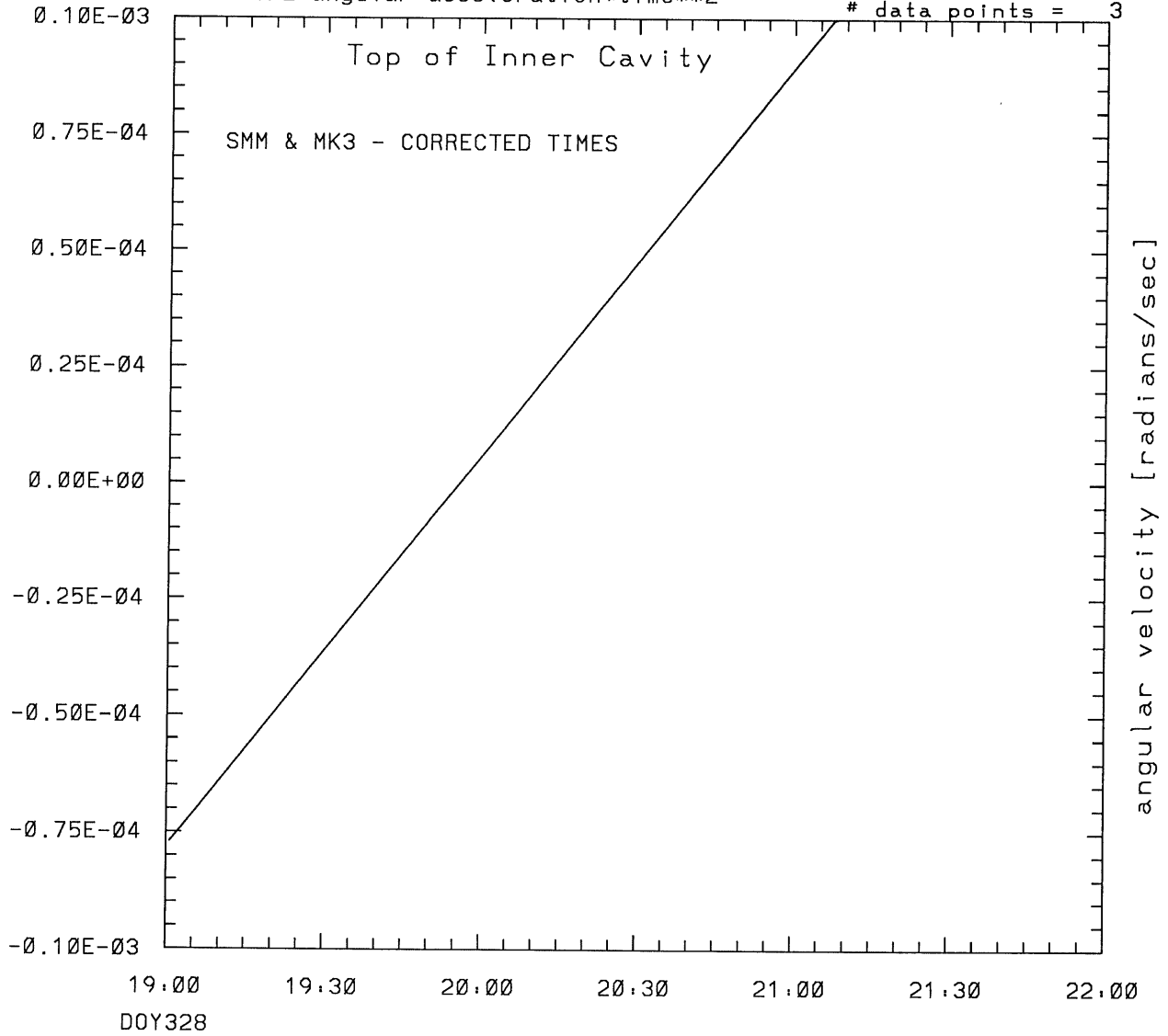


DOY328  
tstart=DOY328 19:11 from derivative=0  
Event begins at 1.98 Solar Radii  
radial acceleration=0.524E-01 km/sec\*\*2

SMM C/P 1987 DOY328 63 +/- 7 degrees

$$\text{angle} = \text{initial angle} + \text{angular velocity} * \text{time} + \frac{1}{2} \text{angular acceleration} * \text{time} ** 2$$

# data points = 3



tstart=DOY328 19:11 from derivative=0  
angular acceleration=0.232E-07 +/-  
0.173E-12 [rad/sec\*\*2]

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

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

year	doj	time	radii	radius	error in angle	error in angle	datatype
1987	328	19:51:49	2.20 +/- 0.10	60.0 +/- 0.5		SMM	
1987	328	20: 0: 4	2.30 +/- 0.20	60.0 +/- 0.5		SMM	
1987	328	21: 0:40	3.60 +/- 0.25	70.0 +/- 1.0		SMM	

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

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

START TIME:

Event began at t = 0 + -0.652E+01 +/- 0.149E+00 [minutes]  
In more convenient units:  
Event began at DOY 328 18:55 +/- 0.149E+00 [minutes]  
Origin defined at DOY328 19: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 236. +/- 10. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.113E+01 +/- 0.550E-01 [solar radii]  
c(2) = 0.204E-01 +/- 0.849E-03 [radii/min]  
c(2) = 0.236E+03 +/- 0.985E+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)= 0.90940E-01 [radii] see Bevington pg. 114  
error in c(2)= 0.10908E-02 [radii/min] see Bevington pg. 114

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.4336E-04 +/- 0.5862E-05[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 52. +/- 1. [degrees]  
a(2) = 0.149E+00 +/- 0.202E-01 [degrees/min]  
a(2) = 0.434E-04 +/- 0.586E-05 [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 19:51 = 236. km/sec

The RADIAL velocity at 20: 0 = 236. km/sec

The RADIAL velocity at 21: 0 = 236. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.78  
Standard Deviation in start time measurement = 0.307E+02  
Error in time = 0.28483E+01 using best fit method  
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.100E-02  
Reduced Chi Squared = 0.669E-02  
Chi Squared = 0.669E-02  
The probability for exceeding chi square = 0.975E+00

The correlation coefficient = 0.999E+00  
The probability that no LINEAR correlation exists between the variables = 0.29211  
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
1987	328	19:51:49	2.20 +/-	0.10	60.0 +/-	0.5	SMM
1987	328	20: 0: 4	2.30 +/-	0.20	60.0 +/-	0.5	SMM
1987	328	21: 0:40	3.60 +/-	0.25	70.0 +/-	1.0	SMM

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

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

START TIME:

tstart=DOY328 19:11 from derivative = 0  
Event begins at 1.98 Solar Radii  
Origin defined at DOY328 19: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.524E-01 +/- 0.000E+00 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.199E+01 +/- 0.000E+00 [solar radii]  
c(2) = -0.304E-02 +/- 0.000E+00 [radii/min]  
c(2) = -0.353E+02 +/- 0.000E+00 [km/sec]  
c(3) = 0.136E-03 +/- 0.000E+00 [radii/min\*\*2]  
c(3) = 0.524E-01 +/- 0.000E+00 [km/sec\*\*2]

ANGULAR INFORMATION:

ANGULAR ACCELERATION= 0.2324E-07 +/- 0.1735E-12[radians/sec\*\*2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 67. +/- 0. [degrees]  
a(2) = -0.268E+00 +/- 0.312E-05 [degrees/min]  
a(2) = -0.780E-04 +/- 0.908E-09 [rad/sec]  
a(3) = 0.240E-02 +/- 0.179E-07 [degrees/min\*\*2]  
a(3) = 0.232E-07 +/- 0.173E-12 [rad/sec\*\*2]

The RADIAL velocity at 19:51 = 128. km/sec

The RADIAL velocity at 20: 0 = 154. km/sec

The RADIAL velocity at 21: 0 = 344. 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!