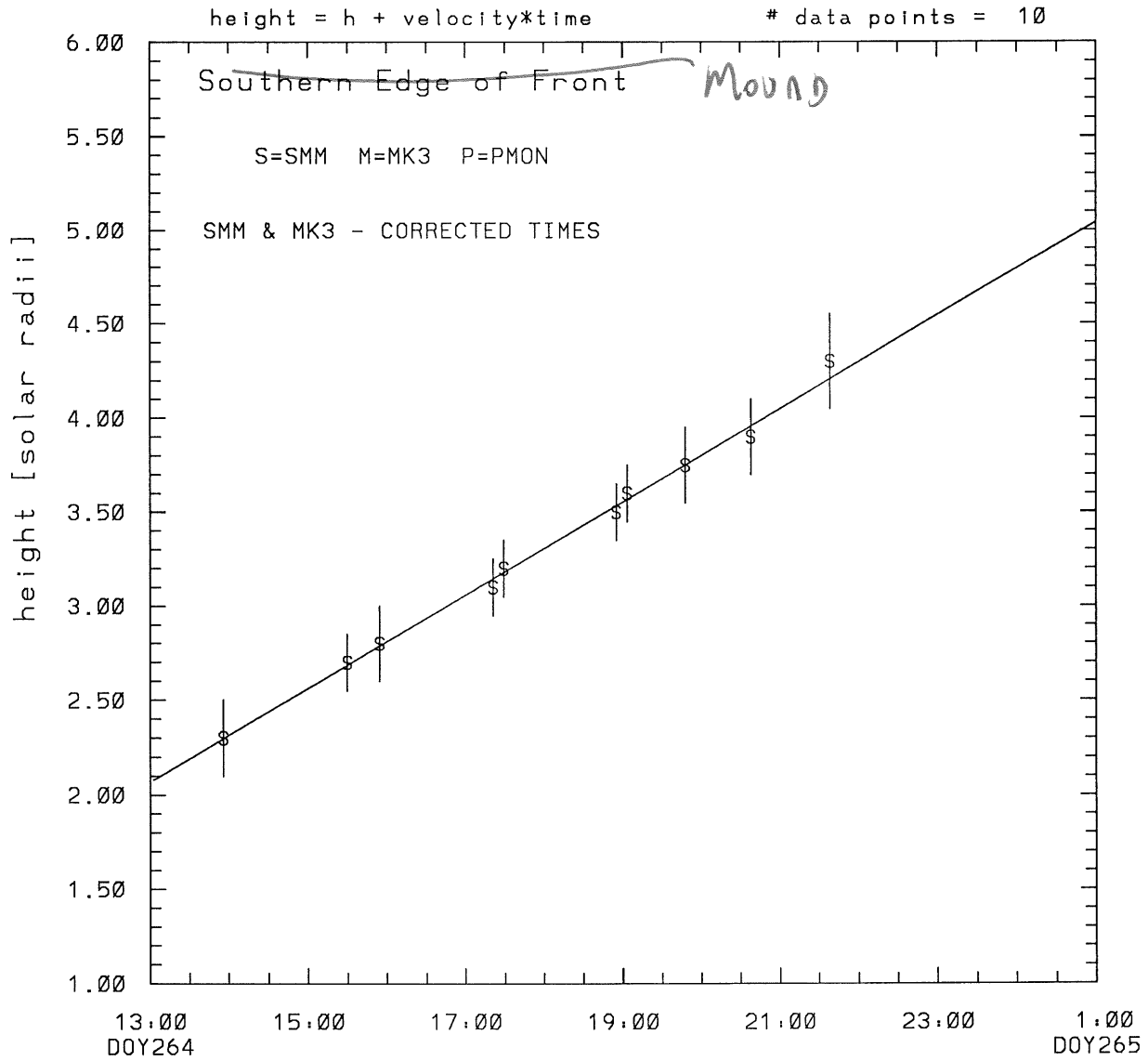


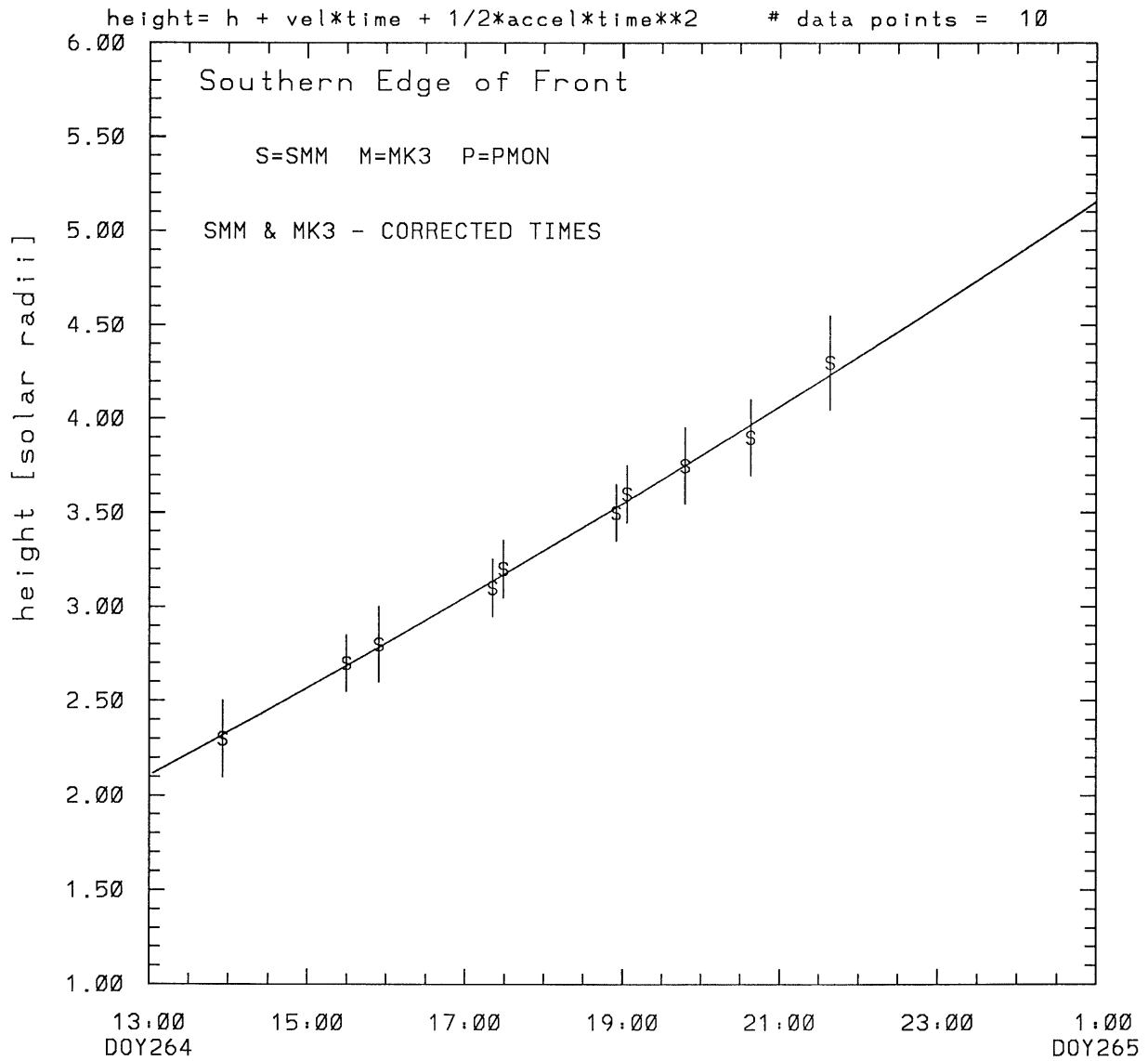


SMM C/P 1987 DOY264 235 +/- 0 degrees



tstart=DOY264 8:42 +/- 0.3 [min.]  
radial velocity= 48. +/- 1. [km/sec]

SMM C/P 1987 DOY264 235 +/- 0 degrees

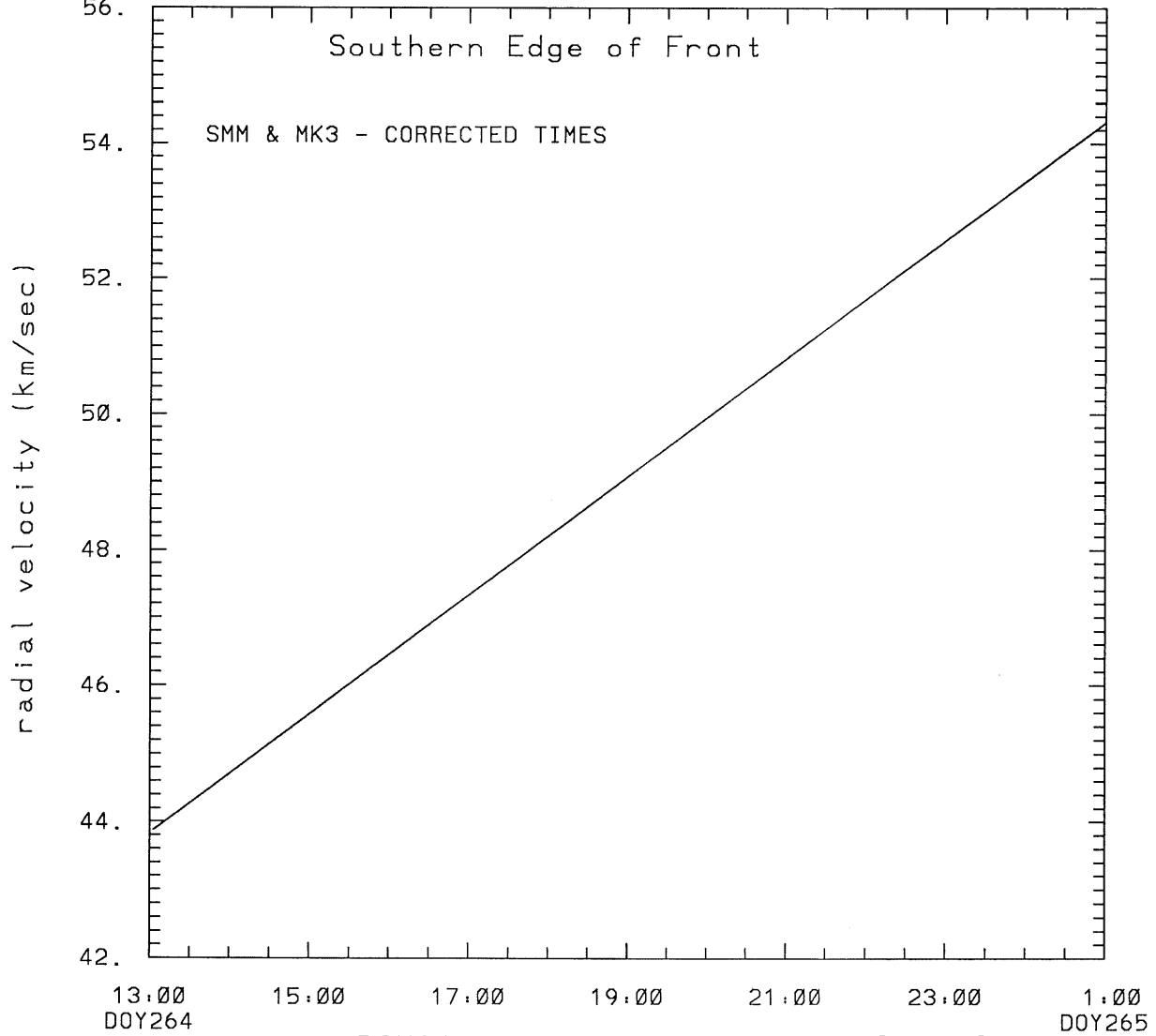


tstart=DOY264 7:53 +/- 93.4 [min.]

radial acceleration= 0.0002 +/- 0.0003 [km/sec\*\*2]

SMM C/P 1987 DOY264 235 +/- 0 degrees

height= h + vel\*time + 1/2\*accel\*time\*\*2 # data points = 10



13:00  
DOY264

15:00

17:00

19:00

21:00

23:00

1:00  
DOY265

tstart=DOY264 7:53 +/- 93.4 [min.]

radial acceleration=0.243E-03 km/sec\*\*2

\*\*\*\*\*

This is a 1 order run

\*\*\*\*\*

\*\*\*\*\*

INPUT:

\*\*\*\*\*

year	doy	time	radii	radius	error in angle	error in angle	datatype
1987	264	13:55:42	2.30	+/- 0.20	235.0	+/- 0.5	SMM
1987	264	15:29:52	2.70	+/- 0.15	235.0	+/- 0.5	SMM
1987	264	15:54:34	2.80	+/- 0.20	235.0	+/- 0.5	SMM
1987	264	17:21: 7	3.10	+/- 0.15	235.0	+/- 1.0	SMM
1987	264	17:29:21	3.20	+/- 0.15	235.0	+/- 1.0	SMM
1987	264	18:55: 4	3.50	+/- 0.15	235.0	+/- 1.0	SMM
1987	264	19: 3:18	3.60	+/- 0.15	235.0	+/- 1.0	SMM
1987	264	19:47:45	3.75	+/- 0.20	235.0	+/- 1.0	SMM
1987	264	20:37:49	3.90	+/- 0.20	235.0	+/- 1.0	SMM
1987	264	21:38:27	4.30	+/- 0.25	235.0	+/- 1.0	SMM

\*\*\*\*\*

Structure being measured:

Southern Edge of Front

\*\*\*\*\*

\*\*\*\*\*

OUTPUT:

\*\*\*\*\*

START TIME:

Event began at t = 0 + -0.258E+03 +/- 0.265E+00 [minutes]

In more convenient units:

Event began at DOY 264 8:42 +/- 0.265E+00 [minutes]

Origin defined at DOY264 13: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 48. +/- 1. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

- c(1) = 0.207E+01 +/- 0.311E-01 [solar radii]
- c(2) = 0.413E-02 +/- 0.992E-04 [radii/min]
- c(2) = 0.479E+02 +/- 0.115E+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)= 0.34726E-01 [radii] see Bevington pg. 114

error in c(2)= 0.10473E-03 [rad/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) = 235. +/- 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 13:55 = 0.000E+00 km/sec  
The TOTAL velocity at 13:55 = 48. km/sec

The TANGENTIAL velocity at 15:29 = 0.000E+00 km/sec  
The TOTAL velocity at 15:29 = 48. km/sec

The TANGENTIAL velocity at 15:54 = 0.000E+00 km/sec  
The TOTAL velocity at 15:54 = 48. km/sec

The TANGENTIAL velocity at 17:21 = 0.000E+00 km/sec  
The TOTAL velocity at 17:21 = 48. km/sec

The TANGENTIAL velocity at 17:29 = 0.000E+00 km/sec  
The TOTAL velocity at 17:29 = 48. km/sec

The TANGENTIAL velocity at 18:55 = 0.000E+00 km/sec  
The TOTAL velocity at 18:55 = 48. km/sec

The TANGENTIAL velocity at 19: 3 = 0.000E+00 km/sec  
The TOTAL velocity at 19: 3 = 48. km/sec

The TANGENTIAL velocity at 19:47 = 0.000E+00 km/sec  
The TOTAL velocity at 19:47 = 48. km/sec

The TANGENTIAL velocity at 20:37 = 0.000E+00 km/sec  
The TOTAL velocity at 20:37 = 48. km/sec

The TANGENTIAL velocity at 21:38 = 0.000E+00 km/sec  
The TOTAL velocity at 21:38 = 48. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.61

Standard Deviation in start time measurement =  $0.138\text{E}+03$   
Error in time =  $0.31401\text{E}+02$  using best fit method  
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 =  $0.144\text{E}-02$   
Reduced Chi Squared =  $0.175\text{E}-01$   
Chi Squared =  $0.140\text{E}+00$   
The probability for exceeding chi square =  $0.100\text{E}+01$

The correlation coefficient =  $0.998\text{E}+00$   
The probability that no LINEAR correlation exists between the variables =  $0.3371\text{E}-08$   
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
1987	264	13:55:42	2.30	+/- 0.20	235.0	+/- 0.5	SMM	
1987	264	15:29:52	2.70	+/- 0.15	235.0	+/- 0.5	SMM	
1987	264	15:54:34	2.80	+/- 0.20	235.0	+/- 0.5	SMM	
1987	264	17:21: 7	3.10	+/- 0.15	235.0	+/- 1.0	SMM	
1987	264	17:29:21	3.20	+/- 0.15	235.0	+/- 1.0	SMM	
1987	264	18:55: 4	3.50	+/- 0.15	235.0	+/- 1.0	SMM	
1987	264	19: 3:18	3.60	+/- 0.15	235.0	+/- 1.0	SMM	
1987	264	19:47:45	3.75	+/- 0.20	235.0	+/- 1.0	SMM	
1987	264	20:37:49	3.90	+/- 0.20	235.0	+/- 1.0	SMM	
1987	264	21:38:27	4.30	+/- 0.25	235.0	+/- 1.0	SMM	

\*\*\*\*\*  
Structure being measured:  
Southern Edge of Front  
\*\*\*\*\*

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

START TIME:

Event began at  $t = 0 + -0.309E+03 +/- 0.934E+02$  [minutes]  
In more convenient units:  
Event began at DOY 264 7:53 +/- 0.934E+02 [minutes]

Origin defined at DOY264 13: 0

RADIAL INFORMATION:

RADIAL ACCELERATION =  $0.243E-03 +/- 0.284E-03$  km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.211E+01 +/- 0.564E-01$  [solar radii]  
 $c(2) = 0.378E-02 +/- 0.424E-03$  [radii/min]  
 $c(2) = 0.438E+02 +/- 0.491E+01$  [km/sec]  
 $c(3) = 0.627E-06 +/- 0.735E-06$  [radii/min\*\*2]  
 $c(3) = 0.243E-03 +/- 0.284E-03$  [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in  $c(1) = 0.58711E-01$  [radii] Bevington pg 154 (8-30)

Exact error in c(1) = 0.11153E-01 [radii] Bevington pg 154 (8-28)  
Approximate error in c(2) = 0.44332E-03 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.10241E-03 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.74644E-06 [radii/min\*\*] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.18906E-06 [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) = 235. +/- 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 13:55 = 0.000E+00 km/sec  
The TOTAL velocity at 13:55 = 45. km/sec

The TANGENTIAL velocity at 15:29 = 0.000E+00 km/sec  
The TOTAL velocity at 15:29 = 46. km/sec

The TANGENTIAL velocity at 15:54 = 0.000E+00 km/sec  
The TOTAL velocity at 15:54 = 46. km/sec

The TANGENTIAL velocity at 17:21 = 0.000E+00 km/sec  
The TOTAL velocity at 17:21 = 48. km/sec

The TANGENTIAL velocity at 17:29 = 0.000E+00 km/sec  
The TOTAL velocity at 17:29 = 48. km/sec

The TANGENTIAL velocity at 18:55 = 0.000E+00 km/sec  
The TOTAL velocity at 18:55 = 49. km/sec

The TANGENTIAL velocity at 19: 3 = 0.000E+00 km/sec  
The TOTAL velocity at 19: 3 = 49. km/sec

The TANGENTIAL velocity at 19:47 = 0.000E+00 km/sec  
The TOTAL velocity at 19:47 = 50. km/sec

The TANGENTIAL velocity at 20:37 = 0.000E+00 km/sec  
The TOTAL velocity at 20:37 = 50. km/sec

The TANGENTIAL velocity at 21:38 = 0.000E+00 km/sec  
The TOTAL velocity at 21:38 = 51. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit



\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.61

Standard Deviation in start time measurement = 0.138E+03

Value of reduced Chi Squared returned from nllst2 = 0.148E-02

Reduced Chi Squared = 0.158E-01

Chi Squared = 0.110E+00

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 = 0.8756E+00

The correlation between the data and the time\*\*2 term = 0.8355E+00

The correlation between the data and the complete equation of motion = 0.9951E+00

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