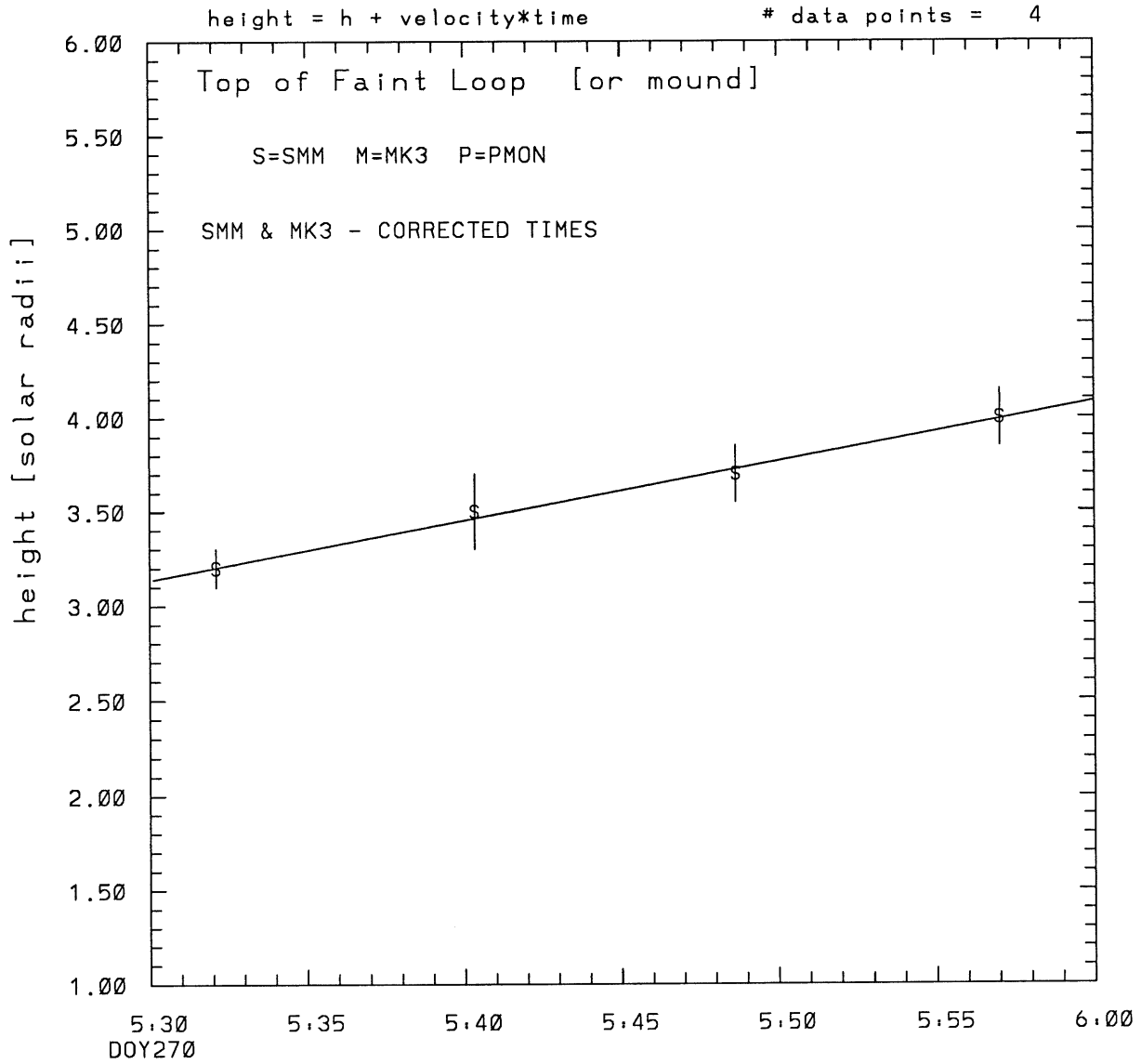
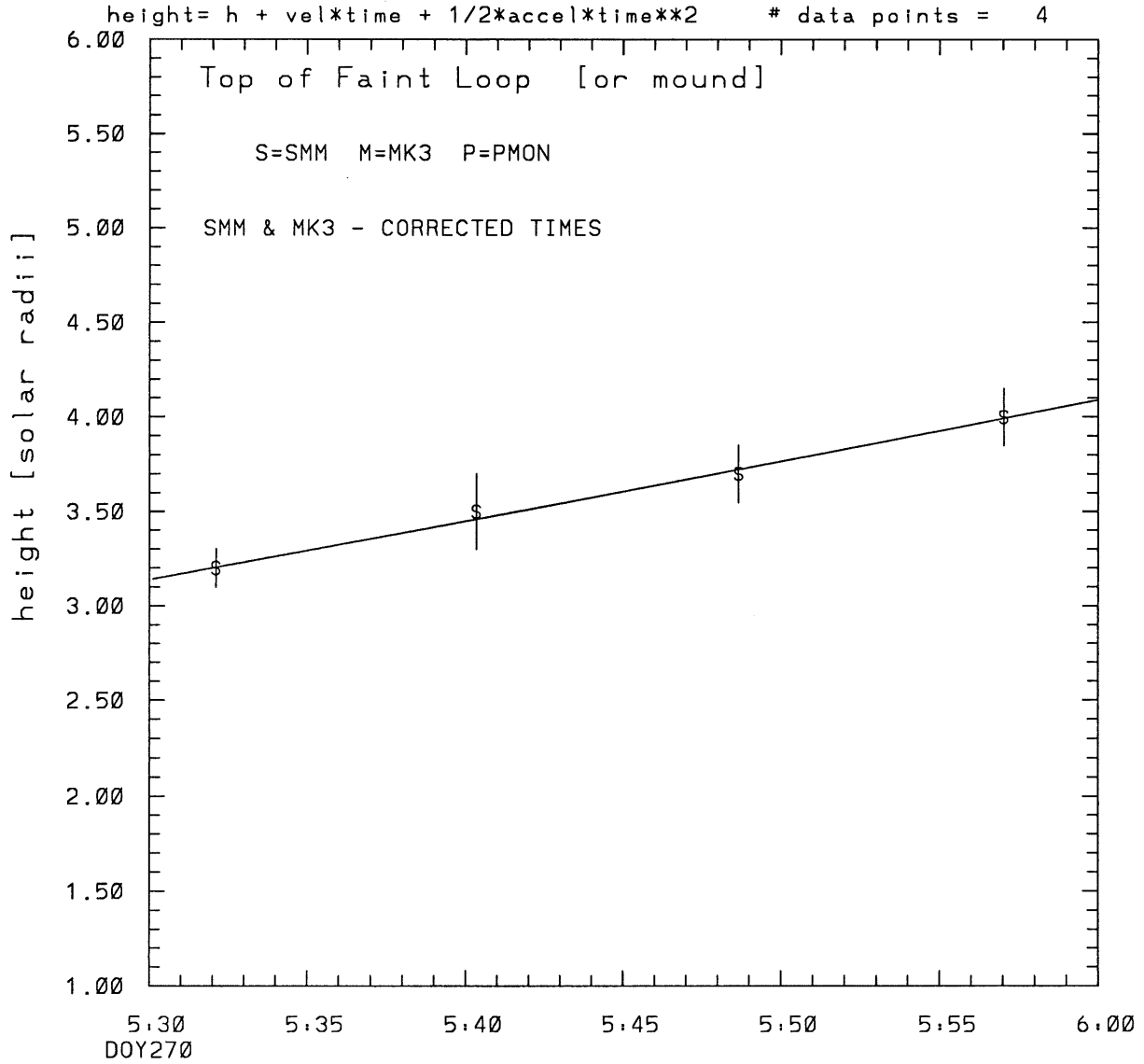


SMM C/P 1989 DOY270 75 +/- 0 degrees



tstart=DOY270 4:24 +/- 0.6 [min.]  
radial velocity= 367. +/- 12. [km/sec]

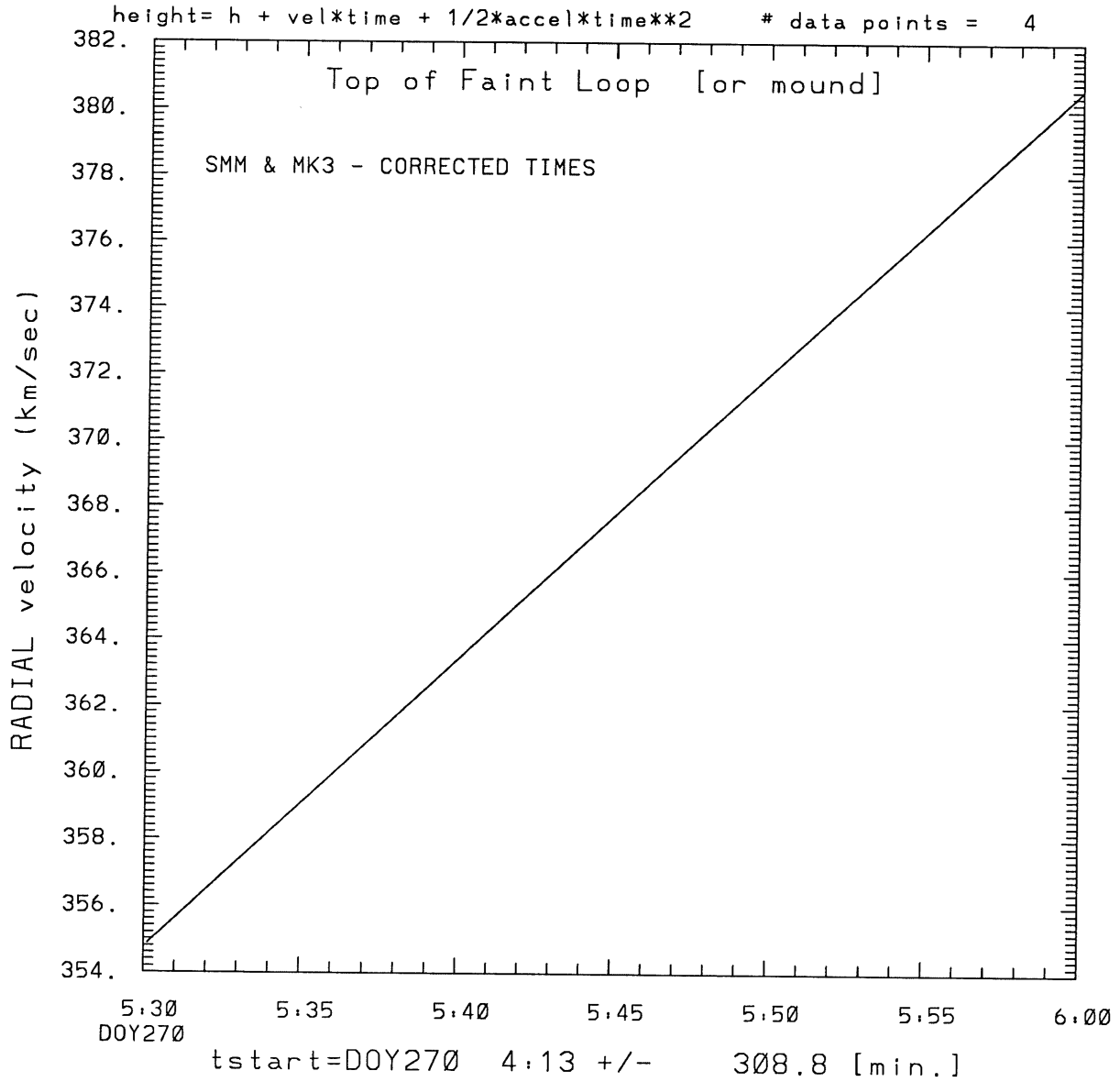
SMM C/P 1989 DOY270 75 +/- 0 degrees



tstart=DOY270 4:13 +/- 308.8 [min.]

radial acceleration = 0.0144 +/- 0.0790 [km/sec\*\*2]

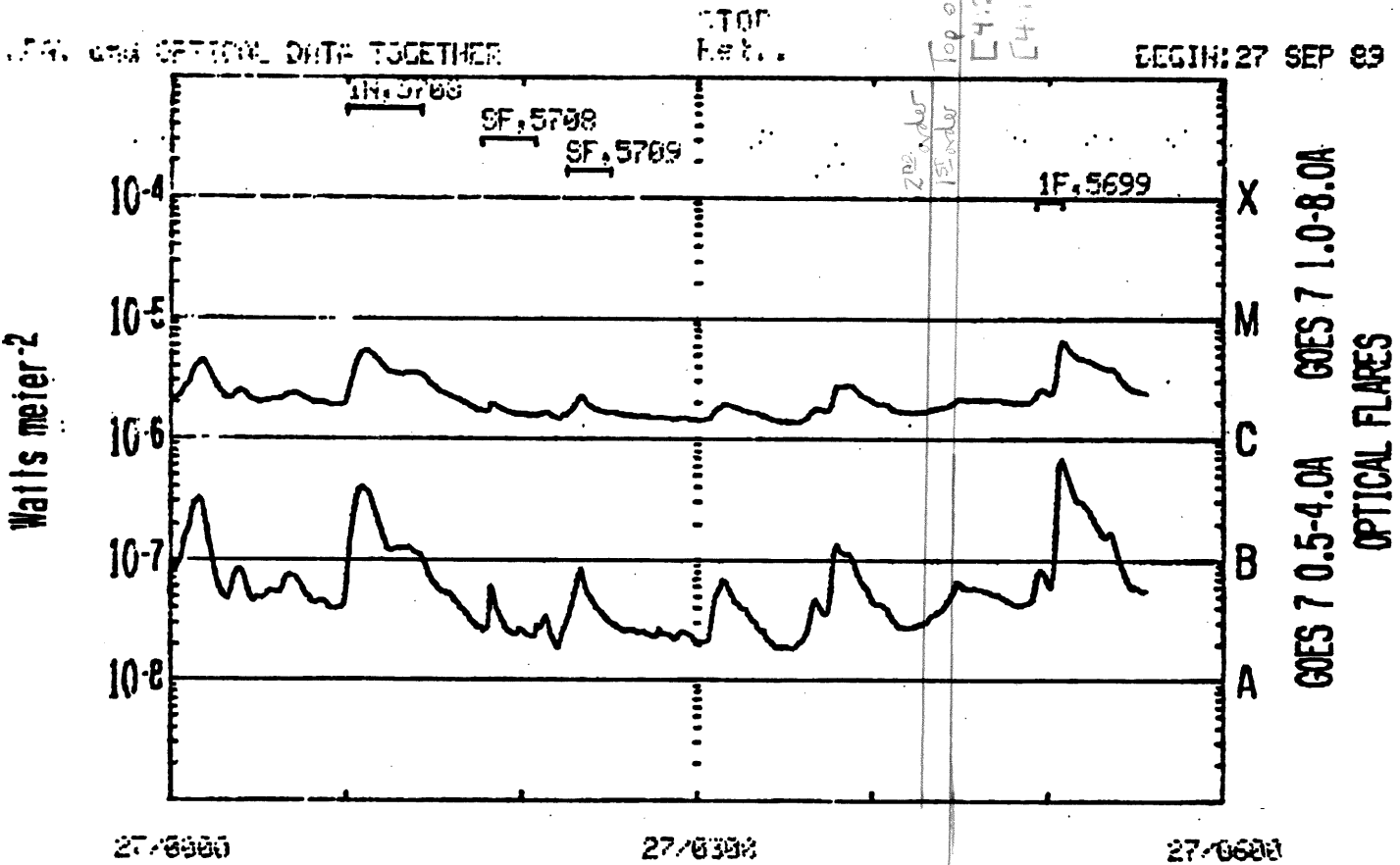
SMM C/P 1989 DOY270 75 +/- 0 degrees



tstart=DOY270 4.13 +/- 308.8 [min.]

radial acceleration=0.144E-01 km/sec\*\*2

1989 DOY 270



SAA's NIGHT

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

RUH: 2129UT  
29 SEP 89

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

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

| year | day | time    | radii    | radius | error in angle | error in angle | datatype |
|------|-----|---------|----------|--------|----------------|----------------|----------|
| 1989 | 270 | 5:32: 6 | 3.20 +/- | 0.10   | 75.0 +/-       | 1.0            | SMM      |
| 1989 | 270 | 5:40:20 | 3.50 +/- | 0.20   | 75.0 +/-       | 1.0            | SMM      |
| 1989 | 270 | 5:48:40 | 3.70 +/- | 0.15   | 75.0 +/-       | 1.0            | SMM      |
| 1989 | 270 | 5:57: 1 | 4.00 +/- | 0.15   | 75.0 +/-       | 1.0            | SMM      |

\*\*\*\*\*  
Structure being measured:  
Top of Faint Loop [or mound]  
\*\*\*\*\*

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

START TIME:

Event began at  $t = 0 + -0.676E+02 +/- 0.621E+00$  [minutes]  
In more convenient units:  
Event began at DOY 270 4:24 +/- 0.621E+00 [minutes]

Origin defined at DOY270 5:30

RADIAL INFORMATION:

RADIAL VELOCITY = 367. +/- 12. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.314E+01 +/- 0.160E-01 [solar radii]  
c(2) = 0.316E-01 +/- 0.103E-02 [radii/min]  
c(2) = 0.367E+03 +/- 0.120E+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)= 0.30663E-01 [radii] see Bevington pg. 114  
error in c(2)= 0.17781E-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) = 75. +/- 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 RADIAL velocity at 5:32 = 367. km/sec

The RADIAL velocity at 5:40 = 367. km/sec

The RADIAL velocity at 5:48 = 367. km/sec

The RADIAL velocity at 5:57 = 367. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.34  
Standard Deviation in start time measurement = 0.929E+01  
Error in time = 0.14784E+01 using best fit method  
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.437E-03  
Reduced Chi Squared = 0.262E-02  
Chi Squared = 0.524E-02  
The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.997E+00  
The probability that no LINEAR correlation exists between the variables = 0.30331  
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 | 270 | 5:32: 6 | 3.20 +/- | 0.10   | 75.0 +/-       | 1.0            | SMM      |
| 1989 | 270 | 5:40:20 | 3.50 +/- | 0.20   | 75.0 +/-       | 1.0            | SMM      |
| 1989 | 270 | 5:48:40 | 3.70 +/- | 0.15   | 75.0 +/-       | 1.0            | SMM      |
| 1989 | 270 | 5:57: 1 | 4.00 +/- | 0.15   | 75.0 +/-       | 1.0            | SMM      |

\*\*\*\*\*  
Structure being measured:  
Top of Faint Loop [or mound]  
\*\*\*\*\*

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

START TIME:

Event began at t = 0 + -0.772E+02 +/- 0.309E+03 [minutes]  
In more convenient units:  
Event began at DOY 270 4:13 +/- 0.309E+03 [minutes]

Origin defined at DOY270 5:30

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.144E-01 +/- 0.790E-01 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.314E+01 +/- 0.255E-01 [solar radii]  
c(2) = 0.306E-01 +/- 0.573E-02 [radii/min]  
c(2) = 0.355E+03 +/- 0.665E+02 [km/sec]  
c(3) = 0.371E-04 +/- 0.204E-03 [radii/min\*\*2]  
c(3) = 0.144E-01 +/- 0.790E-01 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.62028E-01 [radii] Bevington pg 154 (8-30)  
Exact error in c(1) = 0.93502E-02 [radii] Bevington pg 154 (8-28)  
Approximate error in c(2) = 0.10389E-01 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.42804E-02 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.34564E-03 [radii/min\*\*2] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.14851E-03 [radii/min\*\*2] 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) = 75. +/- 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 RADIAL velocity at 5:32 = 357. km/sec

The RADIAL velocity at 5:40 = 364. km/sec

The RADIAL velocity at 5:48 = 371. km/sec

The RADIAL velocity at 5:57 = 378. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.34

Standard Deviation in start time measurement = 0.929E+01

Value of reduced Chi Squared returned from nllst2 = 0.645E-03

Reduced Chi Squared = 0.517E-02

Chi Squared = 0.517E-02

The probability for exceeding chi square = 0.980E+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 = 0.1129E+01

The correlation between the data and the time\*\*2 term = 0.1009E+01

The correlation between the data and the complete equation of motion=0.9924E+00

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