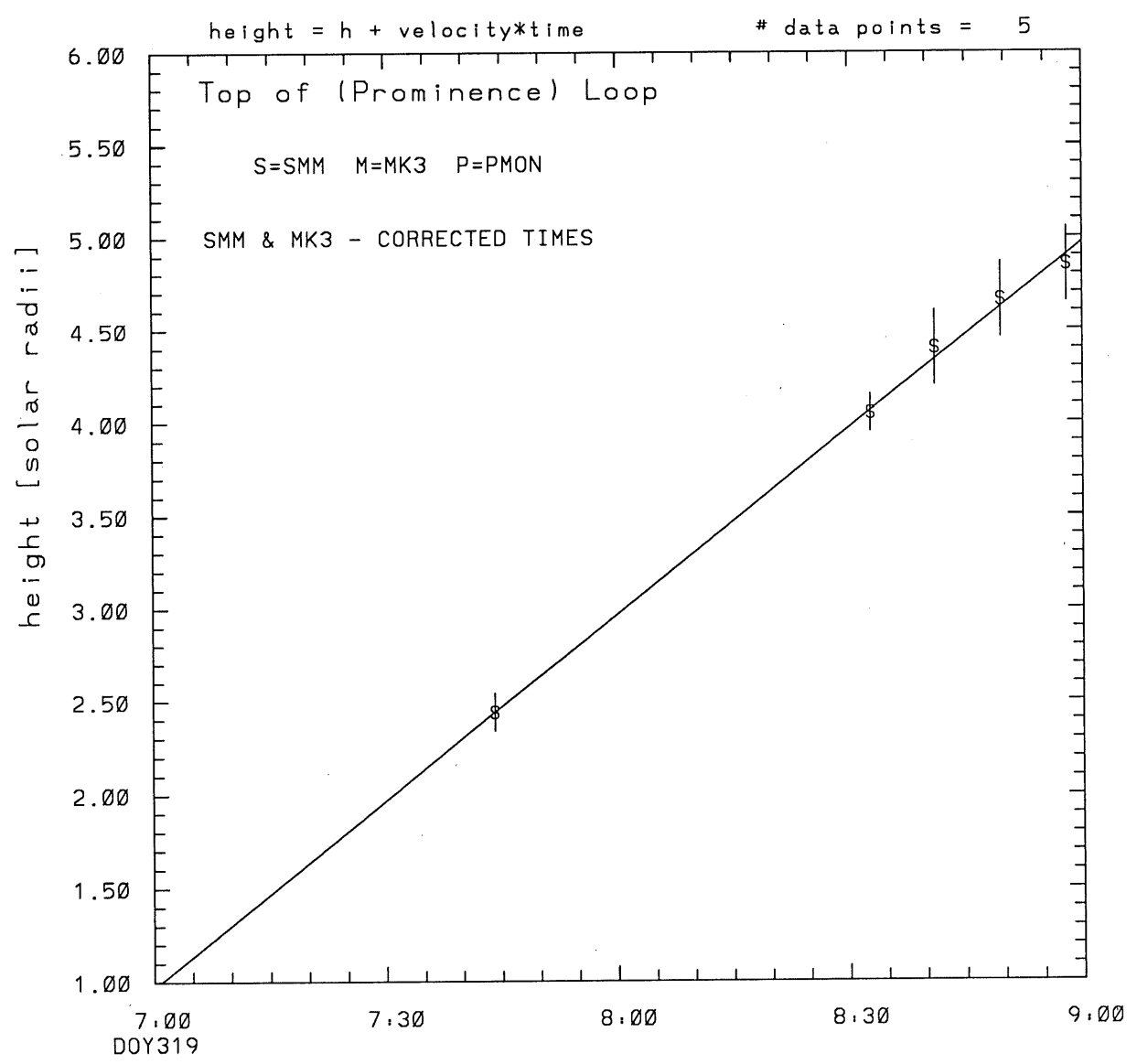
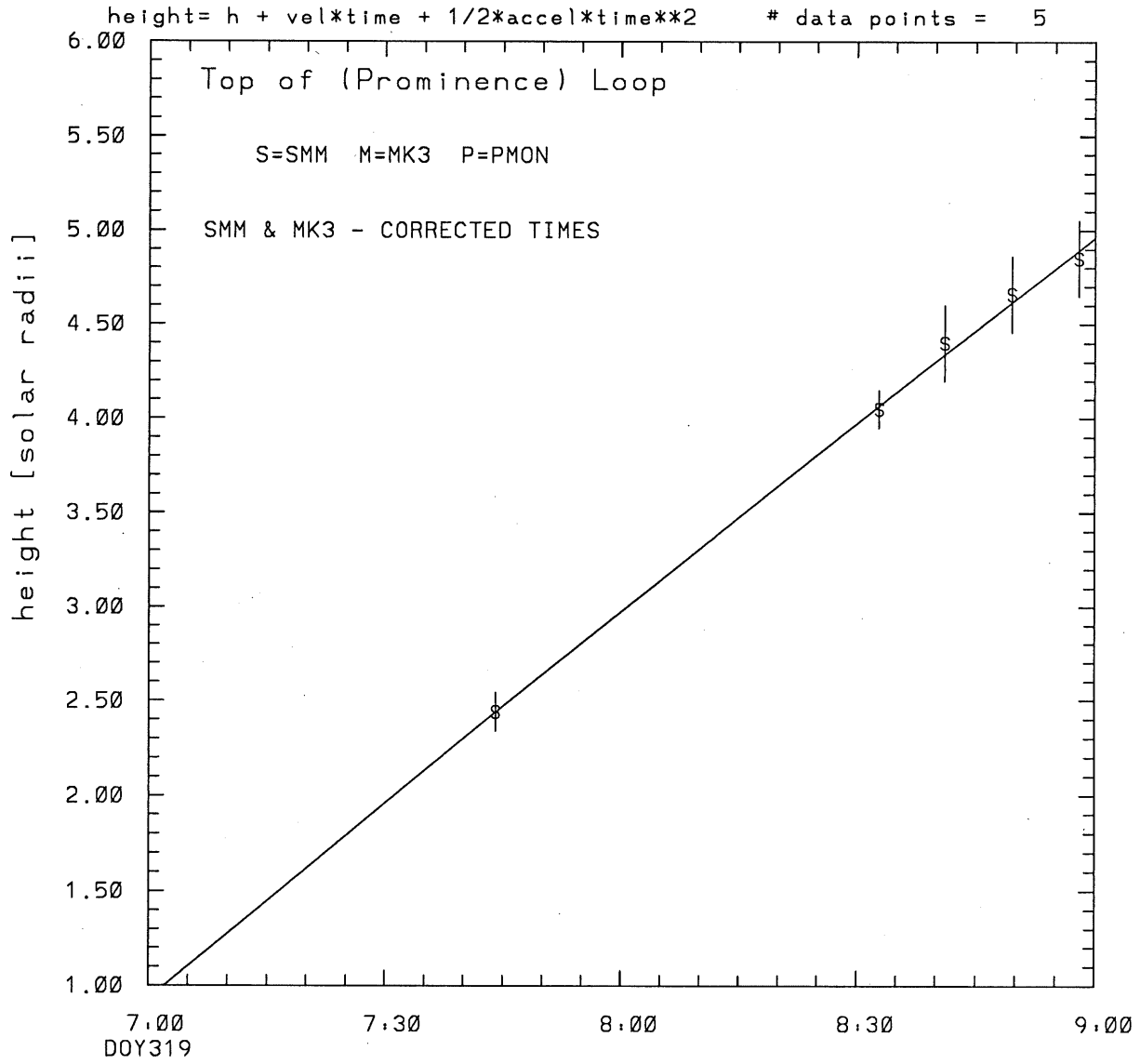


SMM C/P 1989 DOY319 265 +/- 0 degrees



tstart=DOY319 7: 1 +/- 0.0 [min.]  
radial velocity= 386. +/- 6. [km/sec]

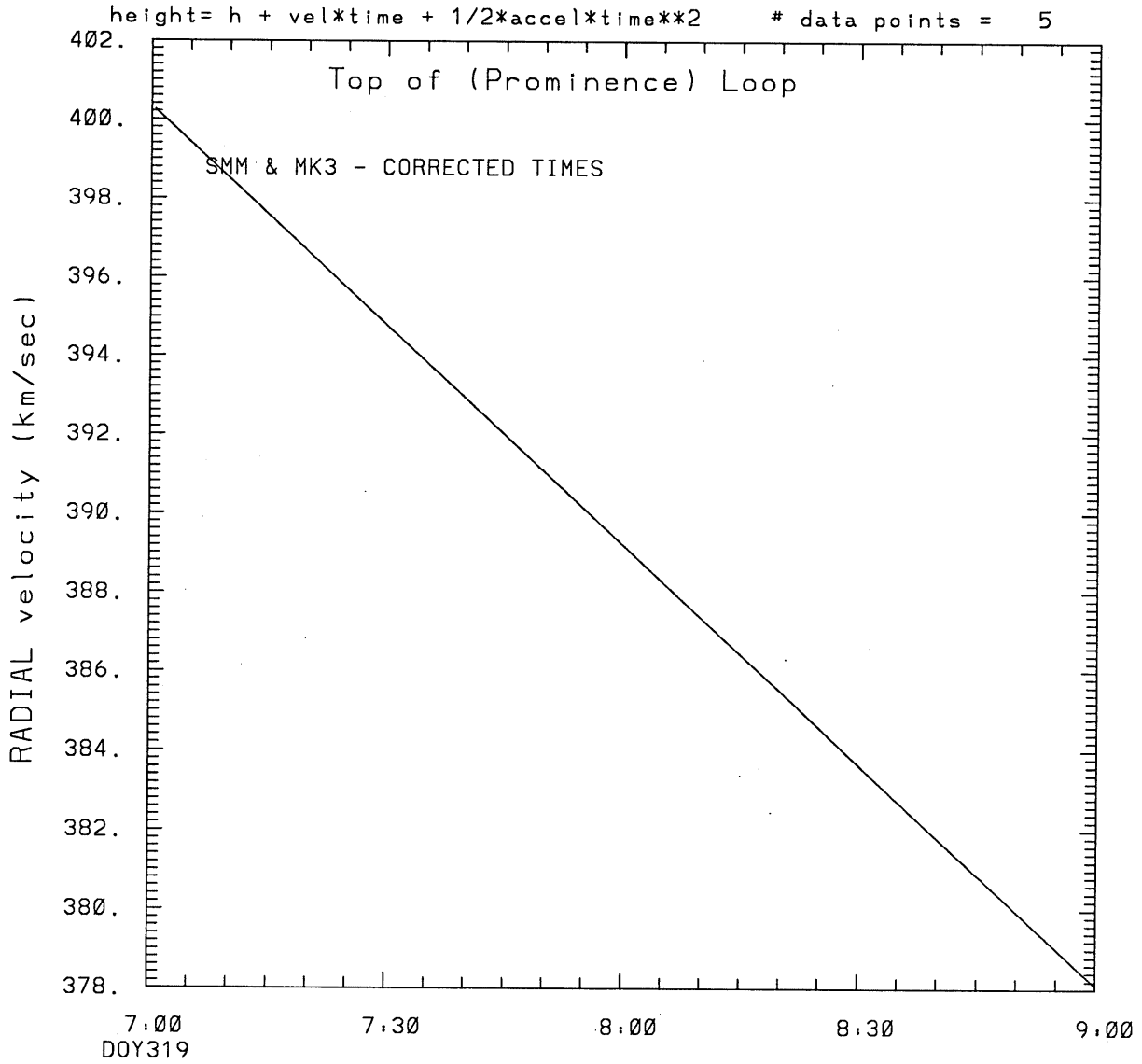
SMM C/P 1989 DOY319 265 +/- 0 degrees



tstart=DOY319 7: 2 +/- 4.4 [min.]

radial acceleration =  $-0.0031 \pm 0.0137$  [km/sec\*\*2]

SMM C/P 1989 DOY319 265 +/- 0 degrees

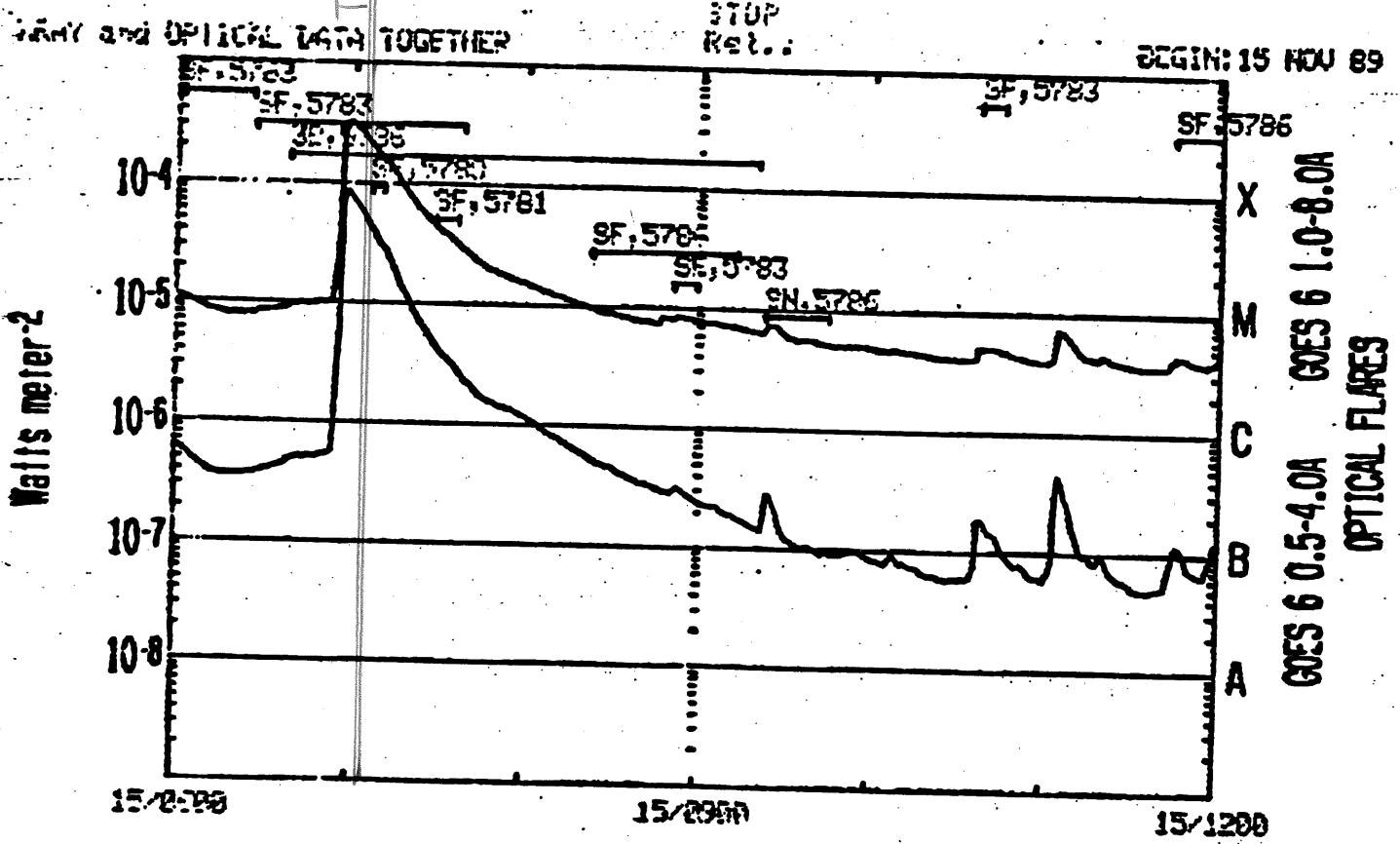


tstart=DOY319 7: 2 +/- 4.4 [min.]

radial acceleration =  $-.309E-02$  km/sec\*\*2

1989 Day 319

Top of Prominence center = 266°  
[7:05] 1st order  
[7:04] 2nd order



GOES-6 1 MIN DATA: OPTICAL FLARE DUR. IMP. REGION

SAA's NIGHT

RUN: 2823UT  
16 NOV 89

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

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

year	doy	time	radii	radius	angle	error in angle	error in angle	datatype
1989	319	7:44: 8	2.44 +/-	0.10	265.0 +/-	0.5		SMM
1989	319	8:32:51	4.05 +/-	0.10	265.0 +/-	1.0		SMM
1989	319	8:41: 6	4.40 +/-	0.20	265.0 +/-	1.0		SMM
1989	319	8:49:32	4.66 +/-	0.20	265.0 +/-	1.0		SMM
1989	319	8:57:58	4.85 +/-	0.20	265.0 +/-	1.0		SMM

\*\*\*\*\*  
Structure being measured:  
Top of (Prominence) Loop  
\*\*\*\*\*

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

START TIME:

Event began at t = 0 + 0.897E+00 +/- 0.642E-02 [minutes]  
In more convenient units:  
Event began at DOY 319 7: 1 +/- 0.642E-02 [minutes]

Origin defined at DOY319 7: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 386. +/- 6. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.970E+00 +/- 0.426E-01 [solar radii]  
c(2) = 0.333E-01 +/- 0.504E-03 [radii/min]  
c(2) = 0.386E+03 +/- 0.585E+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)= 0.87280E-01 [radii] see Bevington pg. 114  
error in c(2)= 0.90308E-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) = 265. +/- 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 7:44 = 386. km/sec

The RADIAL velocity at 8:32 = 386. km/sec

The RADIAL velocity at 8:41 = 386. km/sec

The RADIAL velocity at 8:49 = 386. km/sec

The RADIAL velocity at 8:57 = 386. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.96

Standard Deviation in start time measurement = 0.259E+02

Error in time = 0.27178E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.990E-03

Reduced Chi Squared = 0.104E-01

Chi Squared = 0.311E-01

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 = 0.41401

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	319	7:44: 8	2.44 +/-	0.10	265.0 +/-	0.5	SMM
1989	319	8:32:51	4.05 +/-	0.10	265.0 +/-	1.0	SMM
1989	319	8:41: 6	4.40 +/-	0.20	265.0 +/-	1.0	SMM
1989	319	8:49:32	4.66 +/-	0.20	265.0 +/-	1.0	SMM
1989	319	8:57:58	4.85 +/-	0.20	265.0 +/-	1.0	SMM

\*\*\*\*\*  
Structure being measured:  
Top of (Prominence) Loop  
\*\*\*\*\*

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

START TIME:

Event began at t = 0 + 0.199E+01 +/- 0.438E+01 [minutes]  
In more convenient units:  
Event began at DOY 319 7: 2 +/- 0.438E+01 [minutes]

Origin defined at DOY319 7: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = -0.309E-02 +/- 0.137E-01 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.931E+00 +/- 0.178E+00 [solar radii]  
c(2) = 0.345E-01 +/- 0.535E-02 [radii/min]  
c(2) = 0.400E+03 +/- 0.620E+02 [km/sec]  
c(3) = -0.799E-05 +/- 0.354E-04 [radii/min\*\*2]  
c(3) = -0.309E-02 +/- 0.137E-01 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.32390E+00 [radii] Bevington pg 154 (8-30)  
Exact error in c(1) = 0.79038E-01 [radii] Bevington pg 154 (8-28)  
Approximate error in c(2) = 0.91696E-02 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.25628E-02 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.57929E-04 [radii/min\*\*2] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.17566E-04 [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) = 265. +/- 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 7:44 = 392. km/sec

The RADIAL velocity at 8:32 = 383. km/sec

The RADIAL velocity at 8:41 = 382. km/sec

The RADIAL velocity at 8:49 = 380. km/sec

The RADIAL velocity at 8:57 = 378. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.96

Standard Deviation in start time measurement = 0.259E+02

Value of reduced Chi Squared returned from nllst2 = 0.130E-02

Reduced Chi Squared = 0.141E-01

Chi Squared = 0.282E-01

The probability for exceeding chi square = 0.999E+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 = 0.1196E+01

The correlation between the data and the time\*\*2 term = 0.1156E+01

The correlation between the data and the complete equation of motion=0.9952E+00

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