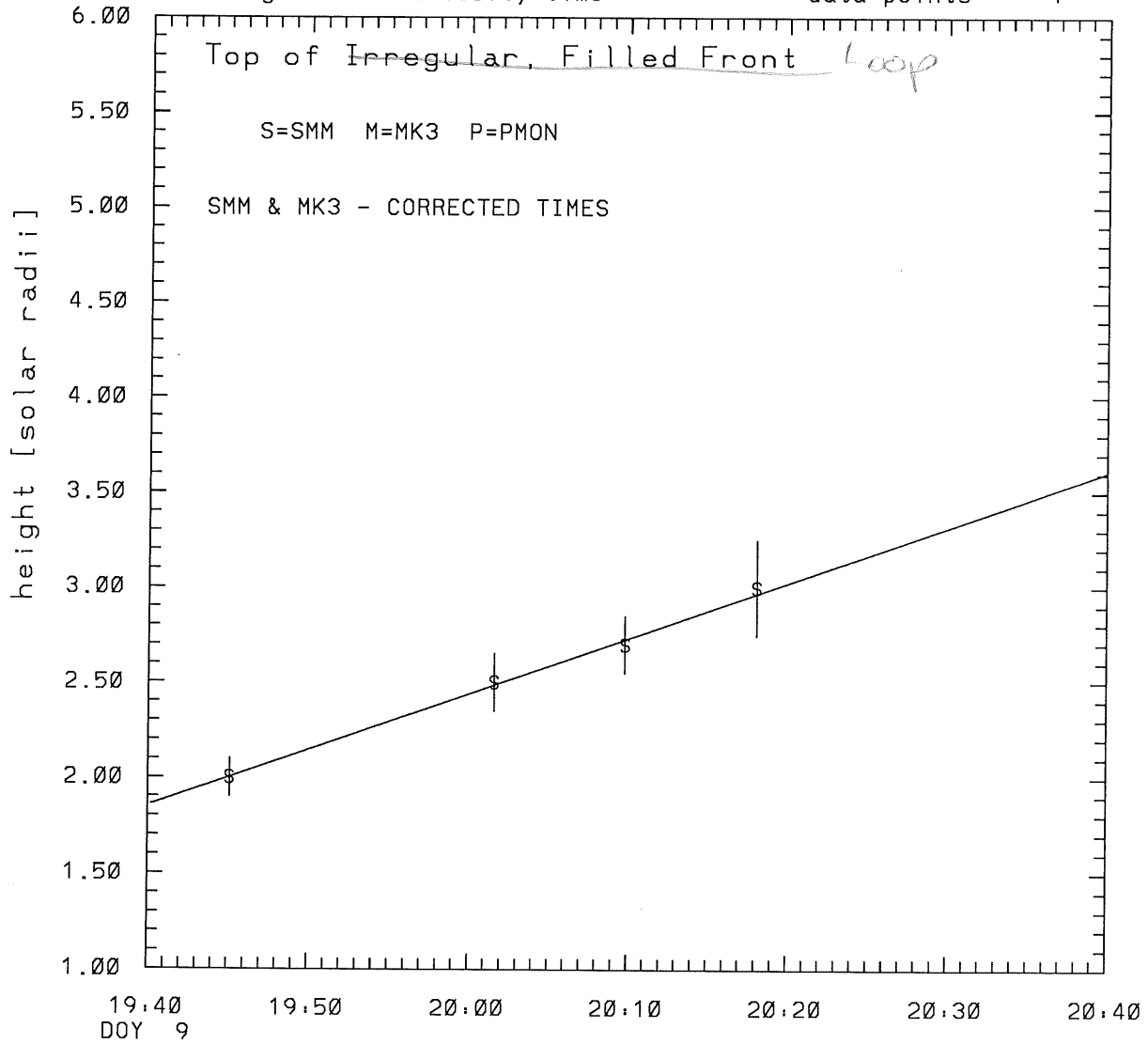


SMM C/P 1989 DOY 9 128 +/- 0 degrees

height = h + velocity*time

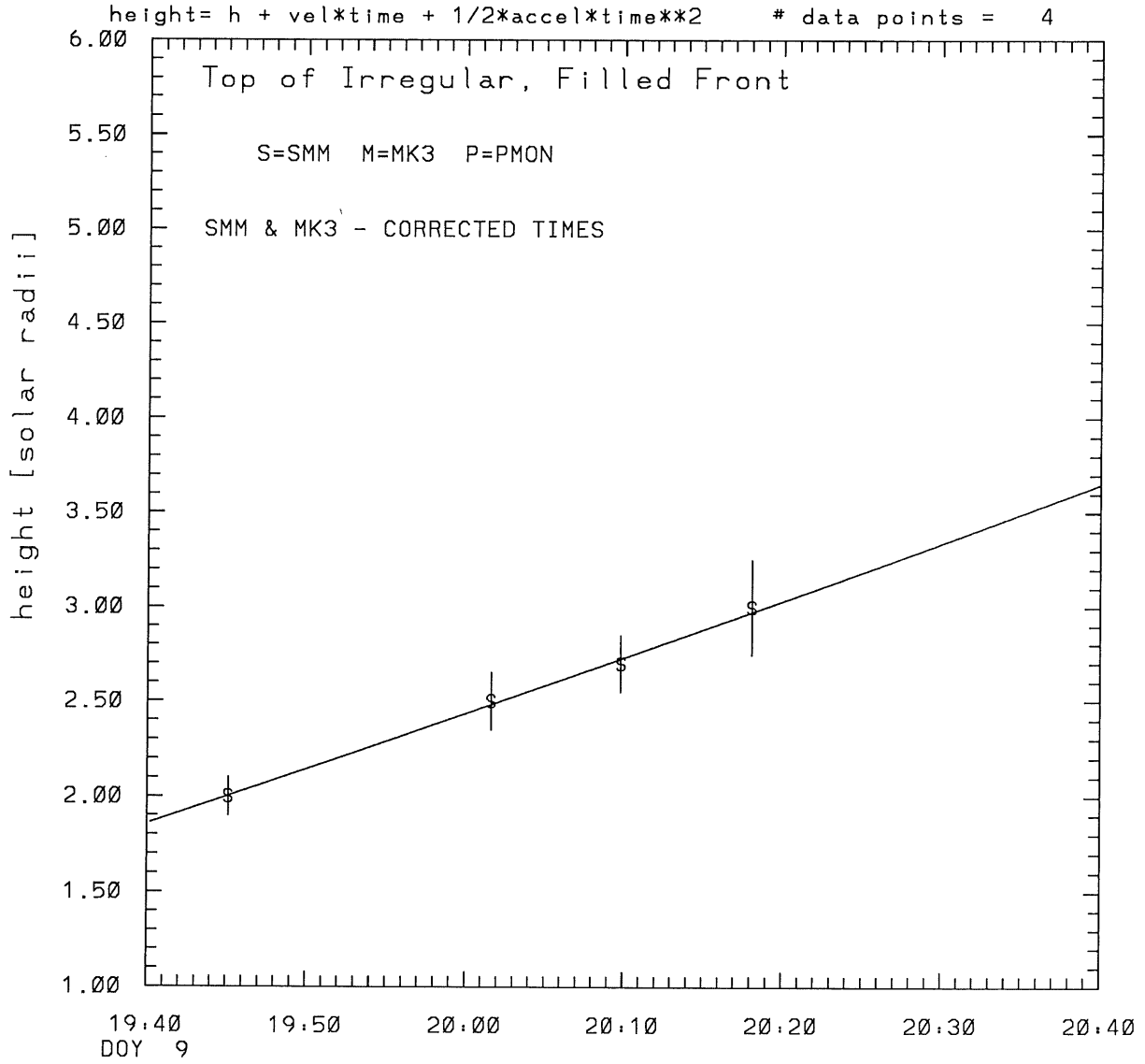
data points = 4



tstart=DOY 9 19:11 +/- 0.4 [min.]

radial velocity= 340. +/- 9. [km/sec]

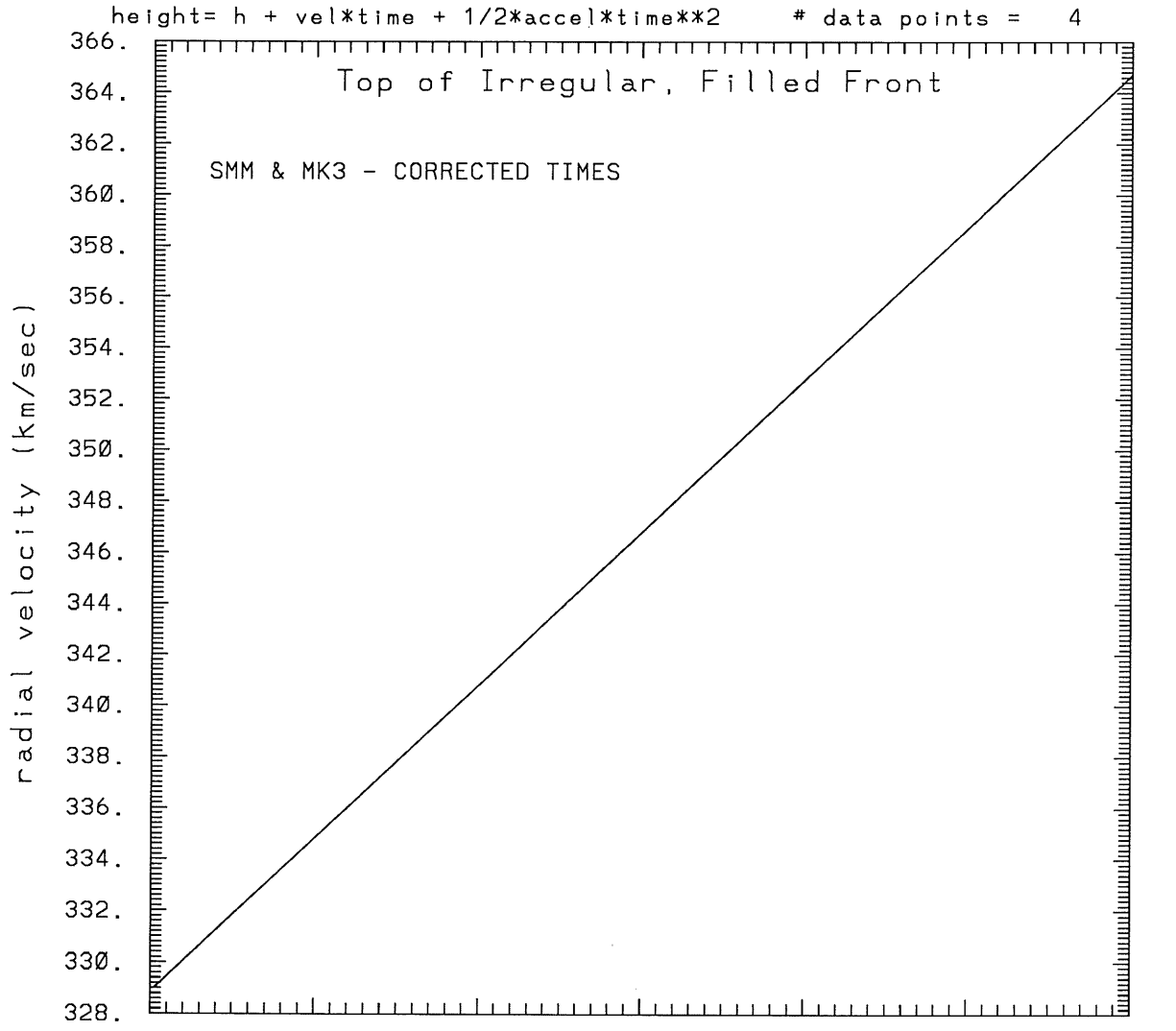
SMM C/P 1989 DOY 9 128 +/- 0 degrees



tstart=DOY 9 19: 9 +/- 100.6 [min.]

radial acceleration = 0.0100 +/- 0.0474 [km/sec**2]

SMM C/P 1989 DOY 9 128 +/- 0 degrees



DOY 9

tstart=DOY 9 19: 9 +/- 100.6 [min.]

radial acceleration=0.996E-02 km/sec**2

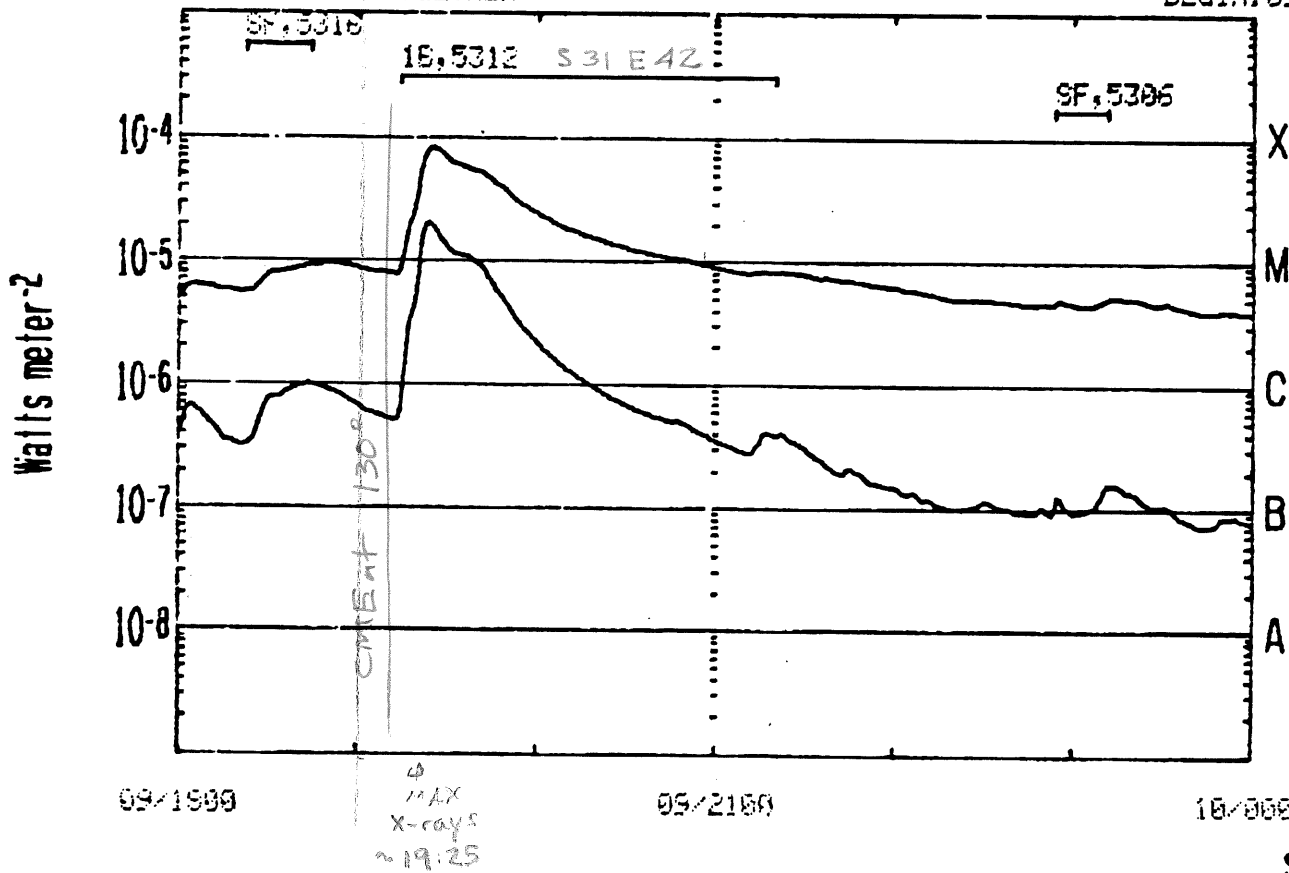
1984 Day 009

Top of Irregular Filled Front

GRAT and OPTICAL DATA TOGETHER

STOP Ret.,

BEGIN: 09 JAN 89



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

09/1989 φ MAX X-rays ~19.25 09/2180 10/0000

SAA's NIGHT

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

RUN: 1801UT 15 JAN 89

This is a 1 order run

INPUT:

year	doy	time	error in radii	error in radius	error in angle	error in angle	datatype
1989	9	19:45: 6	2.00 +/- 0.10		128.0 +/- 0.5		SMM
1989	9	20: 1:37	2.50 +/- 0.15		128.0 +/- 0.5		SMM
1989	9	20: 9:51	2.70 +/- 0.15		128.0 +/- 0.5		SMM
1989	9	20:18: 6	3.00 +/- 0.25		128.0 +/- 0.5		SMM

Structure being measured:

Top of Irregular, Filled Front *Loop*

OUTPUT:

START TIME:

Event began at $t = 0 + -0.290E+02 +/- 0.400E+00$ [minutes]

In more convenient units:

Event began at DOY 9 19:11 +/- 0.400E+00 [minutes]

Origin defined at DOY 9 19:40

RADIAL INFORMATION:

RADIAL VELOCITY = 340. +/- 9. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.185E+01 +/- 0.165E-01 [solar radii]
c(2) = 0.293E-01 +/- 0.803E-03 [radii/min]
c(2) = 0.340E+03 +/- 0.931E+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)= 0.34120E-01 [radii] see Bevington pg. 114

error in c(2)= 0.12814E-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) = 128. +/- 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 19:45 = 0. km/sec

The TOTAL velocity at 19:45 = 340. km/sec

The TANGENTIAL velocity at 20: 1 = 0. km/sec

The TOTAL velocity at 20: 1 = 340. km/sec

The TANGENTIAL velocity at 20: 9 = 0. km/sec

The TOTAL velocity at 20: 9 = 340. km/sec

The TANGENTIAL velocity at 20:18 = 0. km/sec

The TOTAL velocity at 20:18 = 340. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.42

Standard Deviation in start time measurement = 0.122E+02

Error in time = 0.15090E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.371E-03

Reduced Chi Squared = 0.334E-02

Chi Squared = 0.668E-02

The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.998E+00

The probability that no LINEAR correlation exists between the variables = 0.1611E-02

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

This is a 2 order run

INPUT:

year	doy	time	error in radii	error in radius	error in angle	error in angle	datatype
1989	9	19:45: 6	2.00 +/- 0.10		128.0 +/- 0.5		SMM
1989	9	20: 1:37	2.50 +/- 0.15		128.0 +/- 0.5		SMM
1989	9	20: 9:51	2.70 +/- 0.15		128.0 +/- 0.5		SMM
1989	9	20:18: 6	3.00 +/- 0.25		128.0 +/- 0.5		SMM

Structure being measured:

Top of Irregular, Filled Front

OUTPUT:

START TIME:

Event began at $t = 0 + -0.311E+02 +/- 0.101E+03$ [minutes]

In more convenient units:

Event began at DOY 9 19: 9 +/- 0.101E+03 [minutes]

Origin defined at DOY 9 19:40

RADIAL INFORMATION:

RADIAL ACCELERATION = $0.996E-02 +/- 0.474E-01$ km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = $0.186E+01 +/- 0.312E-01$ [solar radii]
c(2) = $0.283E-01 +/- 0.465E-02$ [radii/min]
c(2) = $0.329E+03 +/- 0.539E+02$ [km/sec]
c(3) = $0.257E-04 +/- 0.123E-03$ [radii/min**2]
c(3) = $0.996E-02 +/- 0.474E-01$ [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = $0.66328E-01$ [radii] Bevington pg 154 (8-30)

Exact error in c(1) = $0.13993E-01$ [radii] Bevington pg 154 (8-28)

Approximate error in c(2) = $0.73728E-02$ [radii/min] Bevington pg 154 (8-30)

Exact error in c(2) = $0.31332E-02$ [radii/min] Bevington pg 154 (8-28)

Approximate error in c(3) = $0.17081E-03$ [radii/min**] Bevington pg 154 (8-30)

Exact error in c(3) = $0.83305E-04$ [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) = 128. +/- 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 19:45 = 0. km/sec

The TOTAL velocity at 19:45 = 332. km/sec

The TANGENTIAL velocity at 20: 1 = 0. km/sec

The TOTAL velocity at 20: 1 = 342. km/sec

The TANGENTIAL velocity at 20: 9 = 0. km/sec

The TOTAL velocity at 20: 9 = 347. km/sec

The TANGENTIAL velocity at 20:18 = 0. km/sec

The TOTAL velocity at 20:18 = 352. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.42

Standard Deviation in start time measurement = 0.122E+02

Value of reduced Chi Squared returned from nllst2 = 0.545E-03

Reduced Chi Squared = 0.543E-02

Chi Squared = 0.543E-02

The probability for exceeding chi square = 0.981E+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 = 0.1140E+01

The correlation between the data and the time**2 term = 0.1007E+01

The correlation between the data and the complete equation of motion = 0.9926E+00

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