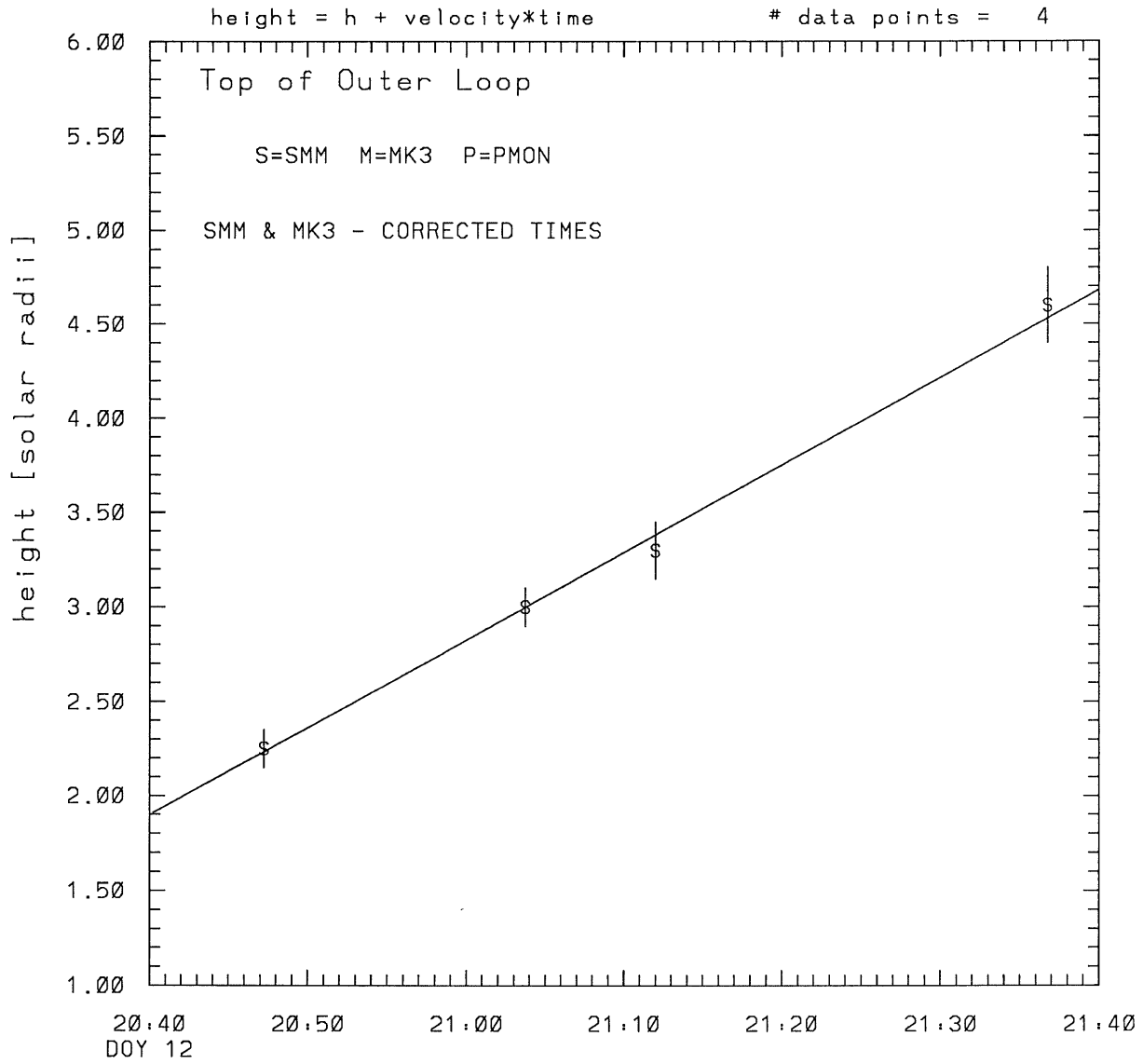
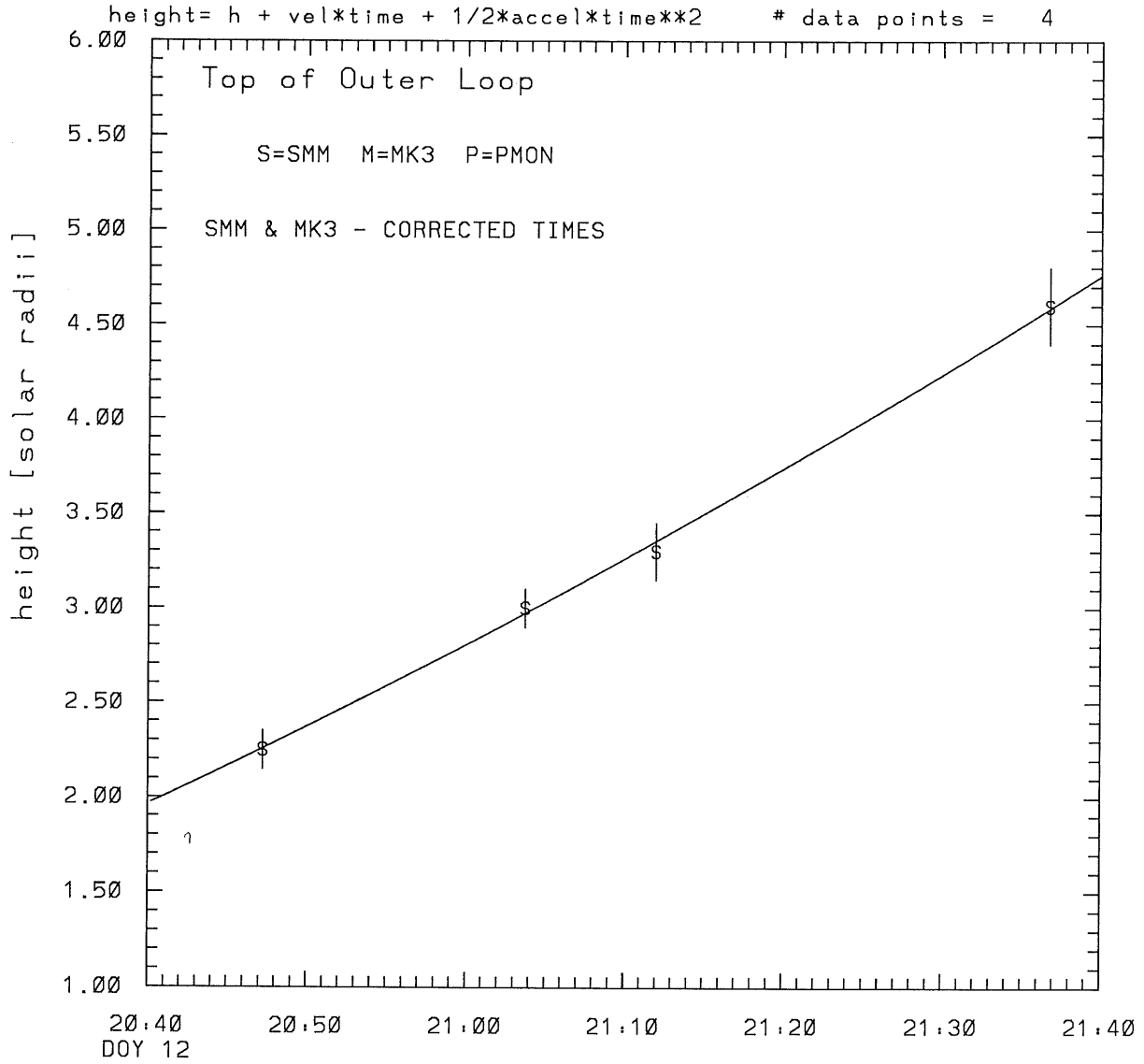


SMM C/P 1989 DOY 12 67 +/- 0 degrees



tstart=DOY 12 20:21 +/- 0.3 [min.]
radial velocity= 538. +/- 19. [km/sec]

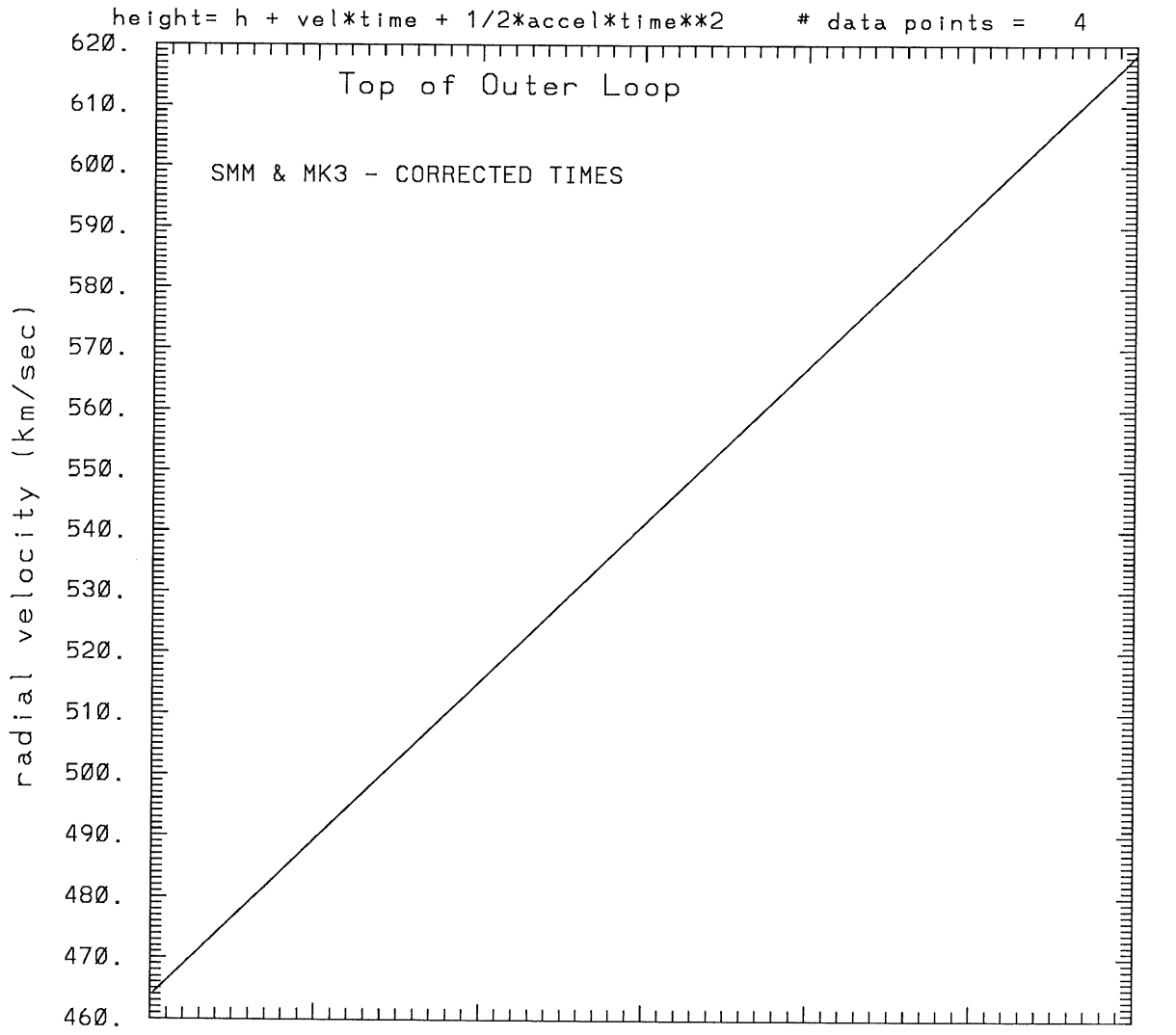
SMM C/P 1989 DOY 12 67 +/- 0 degrees



tstart=DOY 12 20:16 +/- 10.7 [min.]

radial acceleration = 0.0430 +/- 0.0290 [km/sec**2]

SMM C/P 1989 DOY 12 67 +/- 0 degrees



20:40
DOY 12

tstart=DOY 12 20:16 +/- 10.7 [min.]

radial acceleration = $0.430E-01$ km/sec**2

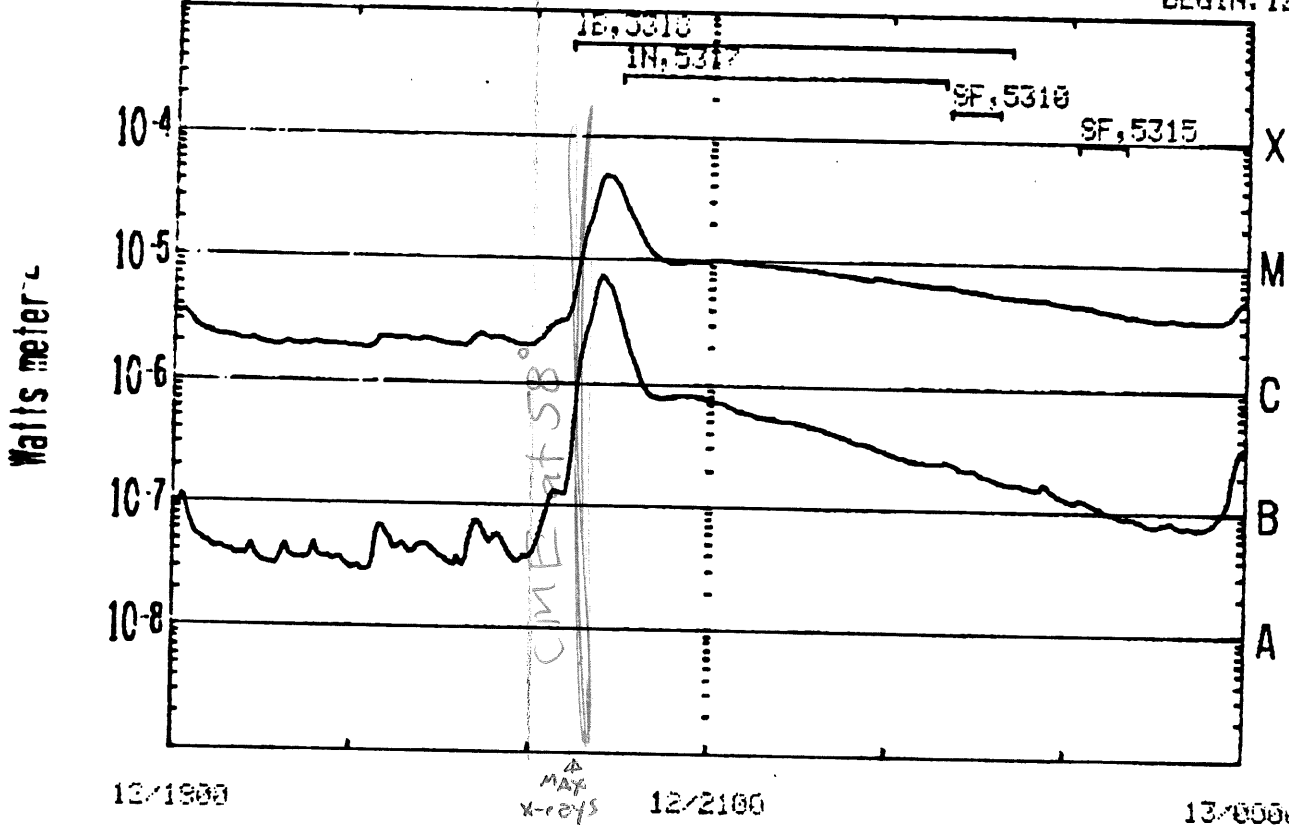
1989 Day 12

SPY and OPTICAL DATA TOGETHER

Top of Outer Loop

STOP Ret..

BEGIN: 12 JAN 89



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

12/1900 ^A MAY X-rays ~ 20:25 12/2100 13/0000

SAA's NIGHT

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

RUN: 1552LIT
18 JAN 89

This is a 1 order run

INPUT:

year	doy	time	radii	error in radius	angle	error in angle	datatype
1989	12	20:47:14	2.25	+/- 0.10	67.0	+/- 0.5	SMM
1989	12	21: 3:44	3.00	+/- 0.10	67.0	+/- 0.5	SMM
1989	12	21:12: 1	3.30	+/- 0.15	67.0	+/- 0.5	SMM
1989	12	21:36:45	4.60	+/- 0.20	67.0	+/- 0.5	SMM

Structure being measured:

Top of Outer Loop

OUTPUT:

START TIME:

Event began at $t = 0 + -0.194E+02 +/- 0.317E+00$ [minutes]

In more convenient units:

Event began at DOY 12 20:21 +/- 0.317E+00 [minutes]

Origin defined at DOY 12 20:40

RADIAL INFORMATION:

RADIAL VELOCITY = 538. +/- 19. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.190E+01 +/- 0.432E-01$ [solar radii]
 $c(2) = 0.464E-01 +/- 0.164E-02$ [radii/min]
 $c(2) = 0.538E+03 +/- 0.190E+02$ [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 $c(1) = 0.75769E-01$ [radii] see Bevington pg. 114

error in $c(2) = 0.21734E-02$ [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) = 67. +/- 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 20:47 = 0. km/sec

The TOTAL velocity at 20:47 = 538. km/sec

The TANGENTIAL velocity at 21: 3 = 0. km/sec

The TOTAL velocity at 21: 3 = 538. km/sec

The TANGENTIAL velocity at 21:12 = 0. km/sec

The TOTAL velocity at 21:12 = 538. km/sec

The TANGENTIAL velocity at 21:36 = 0. km/sec

The TOTAL velocity at 21:36 = 538. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.98

Standard Deviation in start time measurement = 0.179E+02

Error in time = 0.23687E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.225E-02

Reduced Chi Squared = 0.203E-01

Chi Squared = 0.406E-01

The probability for exceeding chi square = 0.998E+00

The correlation coefficient = 0.998E+00

The probability that no LINEAR correlation exists between the variables = 0.1854E-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	12	20:47:14	2.25 +/- 0.10		67.0 +/- 0.5		SMM
1989	12	21: 3:44	3.00 +/- 0.10		67.0 +/- 0.5		SMM
1989	12	21:12: 1	3.30 +/- 0.15		67.0 +/- 0.5		SMM
1989	12	21:36:45	4.60 +/- 0.20		67.0 +/- 0.5		SMM

Structure being measured:
Top of Outer Loop

OUTPUT:

START TIME:

Event began at $t = 0 + -0.259E+02 +/- 0.107E+02$ [minutes]
In more convenient units:
Event began at DOY 12 20:16 +/- 0.107E+02 [minutes]

Origin defined at DOY 12 20:40

RADIAL INFORMATION:

RADIAL ACCELERATION = $0.430E-01 +/- 0.290E-01$ km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.196E+01 +/- 0.564E-01$ [solar radii]
 $c(2) = 0.400E-01 +/- 0.454E-02$ [radii/min]
 $c(2) = 0.464E+03 +/- 0.527E+02$ [km/sec]
 $c(3) = 0.111E-03 +/- 0.751E-04$ [radii/min**2]
 $c(3) = 0.430E-01 +/- 0.290E-01$ [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in $c(1) = 0.10216E+00$ [radii] Bevington pg 154 (8-30)
Exact error in $c(1) = 0.20621E-01$ [radii] Bevington pg 154 (8-28)
Approximate error in $c(2) = 0.73651E-02$ [radii/min] Bevington pg 154 (8-30)
Exact error in $c(2) = 0.28827E-02$ [radii/min] Bevington pg 154 (8-28)
Approximate error in $c(3) = 0.10897E-03$ [radii/min**] Bevington pg 154 (8-30)
Exact error in $c(3) = 0.45246E-04$ [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) = 67. +/- 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 20:47 = 0. km/sec
The TOTAL velocity at 20:47 = 482. km/sec

The TANGENTIAL velocity at 21: 3 = 0. km/sec
The TOTAL velocity at 21: 3 = 525. km/sec

The TANGENTIAL velocity at 21:12 = 0. km/sec
The TOTAL velocity at 21:12 = 546. km/sec

The TANGENTIAL velocity at 21:36 = 0. km/sec
The TOTAL velocity at 21:36 = 610. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.98
Standard Deviation in start time measurement = 0.179E+02
Value of reduced Chi Squared returned from nllst2 = 0.161E-02
Reduced Chi Squared = 0.112E-01
Chi Squared = 0.112E-01
The probability for exceeding chi square = 0.968E+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 = 0.9232E+00
The correlation between the data and the time**2 term = 0.8205E+00
The correlation between the data and the complete equation of motion = 0.1002E+01
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]