



No. 55821T3

1. Rough Copy - Plan for Observing Eclipse
2. Substitute Plans for Denver
3. Eclipse Planning Notes
4. Animal Reactions
5. Animal Reactions; pg. 2
6. Use of Solar Eclipses
7. Eclipse Test; No F 2
8. — SUBJECT; 3
9. — TORALITY 3
10. Plan for Observing Eclipse in case of clouds
11. PHOTOGRAPHY - How to take picture evenly
12. ANALYSIS OF PREPARATORY EVENTS

CARDBOARD SHEET

USED TO OBSERVE

7/20/63

TOTAL EQUISE
OF THE SUN

PARTIAL ECLIPSE PLANS
FOR DENVER - SUBSTITUTE

JULY 20, 1963

1. BEFORE FIRST CONTACT, GET
TEMP. + CLOUD COVER READINGS
2. TIME FIRST CONTACT.
3. TAKE PHOTOS.
4. MEASURE TEMP DROP
5. WATCH CRESCENTS PROJECTED BY
SPACES BETWEEN LEAVES.
6. MEASURE TEMP ~~RISE~~ AT MAXIMUM
7. PHOTO GRAPH + MAP SUN AT "
8. MEASURE TEMP RISE
9. TAKE PHOTOS
10. TIME FOURTH CONTACT,

3

ECLIPSE PLANNING

JULY 20, 1963

May 13, 1963

Notes:

Western prominences appear before eastern.

Study: CORONA DETAILS

How long do eclipses of Sol last?

Observe carefully progress of eclipse - idea of Lunar Motion (rotation).

Little patches of light in shadow of tree - miniature image of eclipse.

Bailey's Beads - due to mountains on the edge of moon's surface

ECLIPSE

PLANNING

July 20, 1963

Subjects: Animal Reactions, May 14, 1963

Notes

Farmyard animals crouch together or retire to shelters where they spend the night, while birds stop singing & behave as they do at sunset

Bats, owls, insects & other nocturnal creatures emerge from their holes.

Insects seem to be deeply affected by the sudden darkness.

Ants stop their labors; recommence as soon as it reappears.

Higher Animals may show signs of fear:

- Horses — } refuse to move;
- Mules — } cower to ground.
- Oxen — }

Hungry Dogs — May stop feeding at onset of totality; start again upon its return.

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P. 2
Animal Reactions;
Cont'd.

certain plants and flowers
will close up — but this
is more likely if eclipse is
of long duration.

ECLIPSE
PLANNING

JULY 20, 1963

7
May 14, 1963

ECLIPSE TEST
No. I:

SUBJECT: TOTALITY

DATE: SUNDAY, 19 MAY, 1963

TIME: ~~11:30 AM~~ 15:00 · 3:00 PM

NOTES: WEATHER NOT PERMITTING
SSI record at 11:00.

COVER: ~~STEP 7, BAILEY'S BEADS.~~

" 8. SECOND CONTACT

" 9. MAP PROMINENCES

" 10. MAP CORONA - COLOUR

" 11. OBSERVE SKY, COMETS?

" 12. PHOTOGRAPH SUN.

" 13. ~~DIAMOND RING EFFECT~~

THIRD CONTACT.

→ USE FILM OR SMOKE GLASS TO PHOTOGRAPH.

TOTAL TIME ALLOTTED:

1 MINUTE 0 SEC.

+ 5 SEC. AT MOST

8

Pg. 2. TOTALITY TEST
NO. I - CONT'D.

RESULTS OBTAINED:

WEATHER: CLOUDY & DRIZZLING / CLEAR FOR PHOTOS.

DATE: MAY 19/63

TIME BEGUN: 03 15:05 15:07 15:10

TIME COMPLETED: 15:05:45 15:07:49 15:10:18

	I	II	III
1 SECOND CONTACT:	4	5	9secs.
2 PROMINENCES	10	13	19secs.
3 CORONA	10	10	09secs.
4 SKY OBSERVATION:	13	not	10secs.
5 PHOTOGRAPHY	08	21	10secs.
6 THIRD CONTACT :	not	held	secs.
TOTALS	45	49	48secs.

average \approx about 0 min, 47 secs.

INFORMATION GAINED:

During the test it was decided to run more than I, Test A, at 15:00 exactly was a flop. So was B, at 15:02.

Test I got all elements recorded except last. Test II missed 4, & III missed 1.

But all in all, we conclude that it should take between 45 + 50 seconds to run through the recordings.

Pg. 3 - TOTALITY TEST

no. I - cont'd

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PHOTOGRAPHY.

USE SOME film to cover lens; photograph Sun. Carefully examine picture resulting for accuracy. Ask question: Will this method serve for the actual eclipse?

Lens opening 1/200 sec.
IF cloudy forget photos.

RESULTS:

LENS SETTINGS: —

TYPE FILM USED: —

NOTES: It was cloudy & drizzly, so no pictures were taken. The picture-taking processes with Minolta 16 were simulated, however, for timing.

NOTES on TEST:

Results were extremely encouraging. This means we can spend more time (just a little more) on each step. Step 6 could take place after totality.

Partly cloudy:
Try without film if cloud covers Sun.

At 18:30, two photographs
were taken of S₀ with
a certain film folded thrice.

Outcome of Pictures:

1/200 sec:

1/50 sec:

HELPER & TIMER — MIKE
Mike Rezak REZAK

Test considered successful.

DAVID LEVY

ECLIPSE PREPARATIONS
Cont'dPLAN FOR OBSERVATION
OF ECLIPSE IN CASE
OF CLOUDSMAINLY CLOUDY - PHOTOGRAPH

1. PHOTOGRAPH SOL
WHEN POSSIBLE
2. NOTE DARKENING OF SKY
& REGION.
3. Note temperature drop & rise.

CLOUDY

- ~~1. LOOK FOR BREAKS IN CLOUDS.~~
1. PHOTOGRAPH REGION.
2. NOTE DARKENING OF SKY &
REGION
3. Note temperature changes

RAINING

1. NOTE DARKENING OF
SKY & REGION
2. Note Temperature changes.

USE THIS PLAN
FOR BOTH MAIN &
SUBSTITUTE AREAS.

ECLIPSE PLANNING

TOTALITY + PARTIALITY PHOTOGRAPHY

PICTURES

1/200 sec. Use f. double exposed film for all pictures except totality.

1 Roll - 20 pictures

- 1
- 2
- 3
- 4
- 5 - halfway
- 6
- 7

1 1/4 hrs.

PARTIAL Totality

- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16 - ~~half way~~
- 17 - ~~half way~~
- 18
- 19
- 20

1 1/4 hrs.

PHOTOGRAPHY

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JULY 20 SOLAR ECLIPSE

MAY 27/63

- 1 - No. 4.0 neutral density filter will adequately reduce solar glare, for well-defined pictures of partial eclipse.

At 98%, longer exposures necessary.

Stability - Don't use neutral density filter.

F 5.6

1/100, 1/25, 1 + 4 seconds.

Example of photographing

Eclipse of Feb/61

Partial - 1/200 sec exposures with filter (F-16)

Total - 1/20 sec at F-4.5 with no filter

(by A. H. Côté, near France)

Remember: 20 pictures allotted

PHOTOGRAPHY

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JULY 20 SOLAR ECLIPSE

MAY 27/63

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Remember: 20 pictures allotted

MAY 24/63

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ANALYSIS OF PREPARATORY
EVENTS FOR ECLIPSE:
JULY 20.

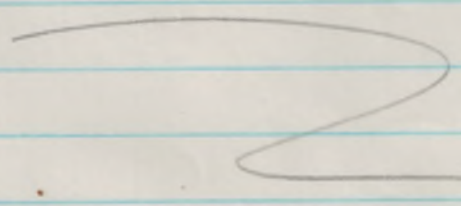
ECLIPSE PLANNING
OFFICIALLY STARTED:
APRIL 28, 1963

FIRST TEST HELD:

MAY 19/63

Test considered
a success.

LETTER RECEIVED (MAY 23/63)
FROM PARENTS SAYING
THAT THEY WILL BE
GLAD TO COOPERATE AND
ARE VERY INTERESTED
IN THE PROGRAM, FOR
THE ECLIPSE.



14 73

May 24, 1963

PREPARATORY PROGRAM
FOR OBSERVATION OF
JULY 20 SOLAR ECLIPSE

ANALYSIS OF DREAM
OF MAY 23/4, night, 1963

DREAM WAS CENTERED DIRECTLY
ON ECLIPSE OF SOL.

IN DREAM, ECLIPSE WAS
OBSERVED IN DENVER, at JNHAD.

The eclipse was very partial
(est 10-20% of surface covered)

ECLIPSE was found to have
occurred "ahead of time".

— When the eclipse was first
noticed, it was thought, "It must
be July 20 then." It was soon, however,
realized that 7/20 was in fact
about 2-4 weeks away.

This is the second dream
I have had about eclipses.

In the first, the Aug 25/61
Lunar eclipse occurred about one
week "ahead of time." The
dream occurred 2 wks. before the eclipse.

PLANS FOR
ECLIPSE OF THE SUN

15

OF
7/20/63

GENERAL INFORMATION

It is only by a remarkable coincidence that we see eclipses. — The \odot & \ominus occupy about the same ~~distance~~ apparent distance about $\bullet 5$ degrees.

FIRST CONTACT DESIGNATES
MOMENT WHEN INVISIBLE
LUNAR DISK TOUCHES SOLAR
DISK.

AFTER ABOUT $1\frac{1}{4}$ hrs. CRESCENT
GROWS VERY THIN.

SECOND CONTACT - DESIGNATES
BEGINNING OF TOTALITY.
WITHIN A FEW SECONDS
ALL DIRECT SUNLIGHT
VANISHES.

THIRD CONTACT NEVER MORE
THAN 7.5 minutes later.
DAYLIGHT RETURNS AS SUDDENLY
AS WHEN IT VANISHED, AND
SOLAR CRESCENT GETS

GENERAL INFORMATION... 2

... WIDER, AND AFTER $1\frac{1}{4}$ hours have passed (approximately), FOURTH CONTACT occurs and the eclipse is over
TOTAL ECLIPSE TIME - ABOUT 2.5 hrs.

PROMINENCES ABOUT $\frac{1}{6}$ OF SOLAR DIAMETER.

AS ECLIPSE progresses landscape becomes darker.

From the west a great shadow comes down with terrifying speed, and before you know it, you are in it.

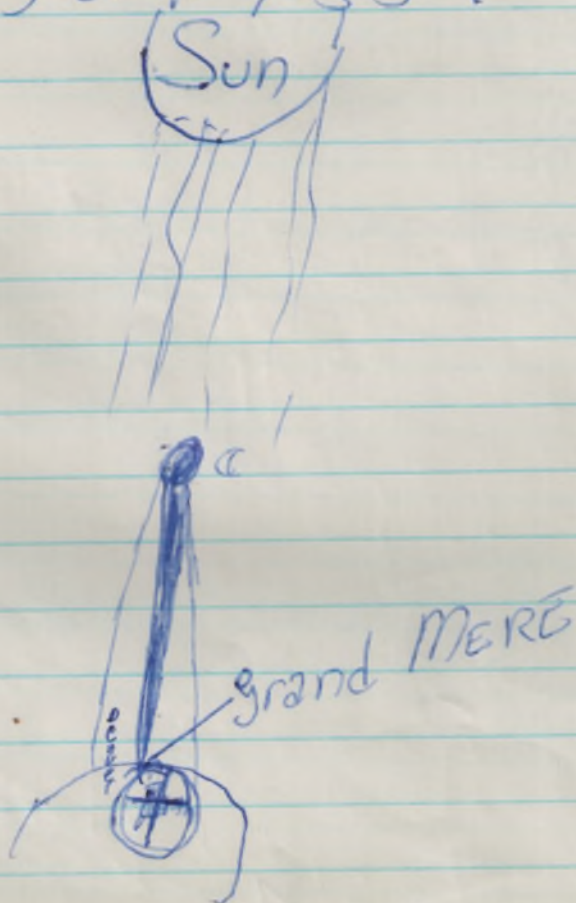
Looking AT PLANETS IS INTERESTING.

Looking at ground & away from Sun - shadow bands - shadow dark & light successively last for a few seconds.

GENERAL INFORMATION... 3

Clouds often ruin
months of hard work...
Don't be too disappointed

IF Sol is more than $18^{\circ} 31'$
from node of \odot orbit, an eclipse
is impossible. If \odot is
less than $15^{\circ} 21'$, one is inevitable.
For a central eclipse limits
are $11^{\circ} 50' + 9^{\circ} 55'$.



ECLIPSE PLANNING

7/20/63

5/27/63

ECLIPSE TEST

NO. 2

SUBJECT: TOTALITY

DATE: SUNDAY, 6/2/63

TIME: 15:00

NOTES: WEATHER NOT PERMITTING

TO COVER: STEP 8: SECOND CONTACT

" 9: PROMINENCES (MAX)

" 10: MAP CORONA-COLOU.

" 11: OBSERVE SKY

" 12: PHOTOGRAPHY (EX)

RESULTS:

DATE: 6/2/63

TIME BEGUN: 15:02 (Interruptions delayed Test two)

TIME COMPLETED: 15:02:49

TIMES: STEP 8: 05 sec.

" 9: 15 sec.

" 10: 11 sec.

" 11: 08 sec.

" 12: 10 sec.

TOTAL: 49 sec

TOTAL: 0 min, 49 sec.

INFORMATION

A. Interruptions cause totality to

fail.

B. Time is still

between 4

+ 50 seconds

It seems that about 48 or
49 seconds ~~are~~ take up
Eclipse Totality Program.

HELPER + TIMER!

Robert Colton.

Robert Colton

Step 8, in comparison to
Test #1, ~~was~~ took about the same
length of time.

Step 9 ~~was~~ took about 2-4
seconds longer than in Test 1's
tests.

Step 10 was about equal.

Step 11 Took ~~about the same~~
~~length of time~~ about 2-5 sec. less.

Step 12 took ~~more~~ about the same
length of time.

Test 1 considered
successful.

ECLIPSE PLANNING

7/20/63

5/28/63

ECLIPSE TEST

no: 3

SUBJECT: Totality

DATE: Monday, 6/3/63

TIME: 16:30

NOTES: WEATHER NOT PERMITTED
TO COVER: STEP 8: SECOND CORONA
" 9: MAP PROMID
" 10: MAP CORONA
" 11: OBSERVE SKY
" 12: PHOTO - (FOR

RESULTS:

DATE: 6/3/63

TIME BEGUN: 16:30 COMPLETED:

STEP 8 04 sec

" 9: 15 sec

" 10: 15 sec

" 11: 10 sec

" 12: 09 sec

TOTAL: 0 min 53 sec

DATA YAK
Test was
right on
schedule

~~Test III~~ II

~~Test III~~ II

- Step 8 - About equal
" 9 - Exactly equal
" 10 - 4 seconds longer
" 11 - 2 " longer
" 12 - about equal

Steps 10 & 11, were the cause of this test lasting over 50 seconds.

However, time is well under 1 minute 5 seconds.

Test considered successful

HELPER + TIMER: ~~Bob~~

BOB COLTON
Robert Colton

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ECLIPSE PLANNING

7/20/63

5/28/63

ECLIPSE TEST:

no. 4

Subject: Totality

DATE: TUESDAY, 6/4/63

TIME: 17:30 ~~17~~

NOTES: WEATHER NOT PERMIT

TO COVER: STEP 8: 2nd Contact

" 9: Prominences

" 10: Corona - colour

" 11: Observe sky

" 12: Photo (FAKE)

RESULTS:

DATE: 6/4/63 18:11:00

TIME BEGUN: 17:30:00 COMPLETED:

step 8 ~~8~~ 4 sec

" 9 11 ~~15~~ "

" 10 10 ~~11~~ "

" 11 10 "

" 12 09 "

Total ~~10~~ min 45 sec

DATA GAIN

45 seconds

this time

It certainly

appears that

45 - 50 FS

time.

HELPER + TIMER:

BOB COLTON
Robert Colton

The test did begin as scheduled; however the timer made an error in timing. The test was therefore reheld at 18:11.

Step 810 - about equal
" 911 - slightly less
" 91 - 5 seconds less
" 11 - exactly equal
" 12 - exactly equal

~~40 sec~~

45 sec - ~~less~~ less than

Test 3.

Test considered ~~successful~~
successful.

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ECLIPSE PLANNING

7/20/63

5/28/6

ECLIPSE TEST:

No. 4

Subject: Totality

DATE: TUESDAY, 6/4/63

TIME: 17:30 ~~17~~

NOTES: WEATHER NOT PERMIT

TO COVER: STEP 8: 2nd Contact

" 9: Prominences

" 10: Corona - colour

" 11: Observe sky

" 12: Photo (FAKE)

RESULTS:

DATE: 6/4/63 18:11:00

TIME BEGUN: 17:30:00 COMPLETED:

step 8 ~~8-4~~ 4 sec

" 9 ~~11~~ 15 "

" 10 ~~10~~ 11 "

" 11 10 "

" 12 09 "

Total ~~10~~ min 45 sec

DATA GAIN

45 seconds

this time

It certainly

appears that

45 - 50 IS

time.

HELPER + TIMER:

BOB COLTON
Robert Colton

The test did begin as scheduled; however the timer made an error in timing. The test was therefore reheld at 18:11.

- Step 810 - about equal
 - " 911 - slightly less
 - " 1011 - 5 seconds less
 - " 1111 - exactly equal
 - " 1211 - exactly equal
-
- 40 sec
45 sec - ~~sec~~ less than

Test 3.

Test considered ~~successful~~ successful.

ECLIPSE PLANNING

7/20/63

5/28/

ECLIPSE TEST
No. 5

Subject: Totality

DATE: THURSDAY 6/6/63

TIME: ~~20:00~~ 16:30NOTES: WEATHER NOT PERMITTED
(NATURALLY)

TO COVER:

- STEP 8: 2nd Contact
- " 9: Map PROMINEN
- " 10: MAP CORONA-
- " 11. Observe sky
- " 12. Photography

RESULTS:

DATE: 6/6/63

TIME BEGUN: ~~16:16~~ 16:49 COMPLETED

step 8: 04 sec.

" 9: 11 "

" 10: 09 "

" 11: 08 "

" 12: 09 "

TOTAL: ~~47~~⁴ min 41 sec.

DATA GAINED:

Only 41 sec.

Test delays

because of con

exercise of an

appointment.

HELPER + TIMER:

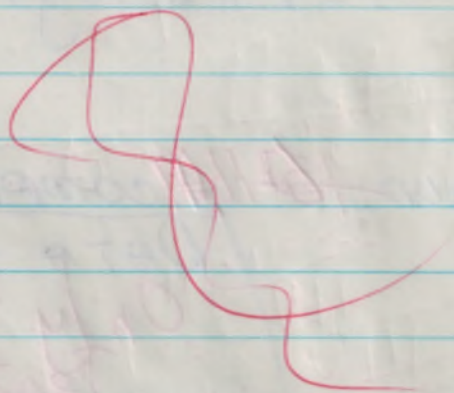
Robert Colton

Robert Colton

To Test 5 Test 4
Step 8 - about equal
" 9 - exactly equal
" 10 - about equal
" 11 - slightly less
" 12 - exactly equal

Test

considered
successful.



ECLIPSE PLANNING
7/20/63

20
20

5/28

ECLIPSE TEST
No. 6

SUBJECT: TOTALITY
DATE: SUNDAY, JUNE 9, 1963
TIME: 13:00

NOTES: WEATHER NOT PERMITTING
TO COVER, STEP 8: Second Cor
" 9: Map Promine
" 10: Map CORONA
" 11: Observe st
" 12: Photography

RESULTS:

DATE: 6/9/63

Time Begun: 13:00 COMPLETED: 13:00

step 8:	05	sec
" 9:	10	"
" 10:	07	"
" 11:	11	"
" 12:	06	"

DATA GAINED:

This Test, seems
to counterbalance
test no 3; 5 3.
The Test is

TOTAL: 0 min 39 sec apparently success

Test 6 - 5

Step 8 - about equal 9 - about equal

10 - 2 sec. less 11 - 3 sec. only

12 - 3 seconds less Total - only 2 sec

HELPER & TIMER:

ROBERT COLTON

Robert Colton

Test considered successful.

General analysis of Tests 1-6 inc

Average — $45\frac{2}{3}$ seconds

Test I — 45-49-48 av. about 47

" II — 49 seconds

" III — 53 "

" IV — 45 "

" V — 41 "

" VI — 39 "

These tests were certainly successful.

Next Tests: — It appears that we can now move on to the next two:

Prospective Test VII - The whole eclipse.

Tests) Test VIII - The whole eclipse

and the } Test IX - Eclipse day.

last two: } Test X - Eclipse day, after program is made

ECLIPSE PLANNING

TIMES OF ECLIPSE

+ MORE ANALYSIS OF

Ottawa, Canada - 2 hrs. 40 or also

Denver - 2.5 hrs.

New Orleans - 2 hrs app.

Halifax, N.S. 2 hrs. app.

Chicago 2.5 hrs. about

Boston About 2 hrs.

MORE TEST ANALYSES

Test	Step 8	9	10	11
1 (Average)	05	11	10	11
2	05	15	11	08
3	04	15	15	10
4	05	11	10	10
5	04	11	09	08
6	05	10	07	11

Averages: $4\frac{2}{3}$ ~~$12\frac{2}{6}$~~ $10\frac{1}{3}$ $9\frac{2}{3}$

AVERAGES: $4\frac{2}{3}$ $12\frac{1}{6}$ $10\frac{1}{3}$ $9\frac{2}{3}$

The Tests (1-6) just conducted showed the above times.

The tests were certainly successful.

ECLIPSE PLANNING

7/20/63
 ANOTHER STEP IN LUNAR DISK 5/29/63
 A letter on page 139 of Sky & Telescope, March, 1963, prompted me to decide to add another step to my eclipse program. The letter reads:

Sir:

The total solar eclipse of July 20, 1963, may give opportunity for amateurs to make certain observations usually neglected by professional astronomers.

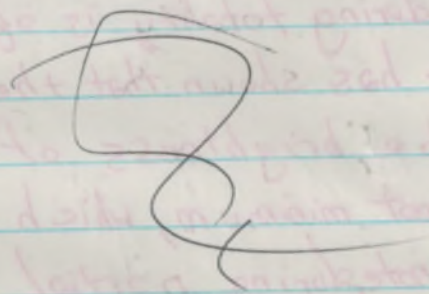
The lunar disk during totality is of course brightly earthlit. Prof. A. Davillier has shown that the albedo of the Moon is greatest at sunspot minimum, which will occur so

Observers can note, during partial eclipse, whether the lunar disk appears darker or brighter than the umbrae of sunspots; during totality, the general appearance & structure of disk, and whether structure can be seen.

Data may be sent to Prof. A. Davillier, Observatoire du Pic du Midi, Bagnères de Bigorre, Pyrénées, France.

Cicely M. Botley
 2 Park Rd.
 Tunbridge Wells
 Kent, England

The decision was made to go ahead with the Partial section. If the tests (1-6 inc) appear indicate that there is extra time, this may the total section of the program mentioned overleaf will be held as well. It is hoped that results will be sent in to address requested



ECLIPSE
PLANNING

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LUNAR SHADOW

Describe carefully appearance of sky from moment to moment near totality

The Earth's shadow will be difficult to see before second contact. After third contact, a conspicuous shadow will appear to rise from the ground, move upward and away.

Moon's shadow in clear sky appears a dusky blue, & light from outside its edge forms a bright border around the horizon.

The smaller the distance from totality path, the better the chance for observing path's shadow. In case we can have to stay in or near Montreal.

P. 339-340 June Sky & Seas
Data to WILLIAM H. GLENN
3235 Parkside Pl
New York 67, N.Y.

ECLIPSE PLANNING - 7/20/63

ECLIPSE OBSERVATION PLAN FOR JULY 20, 1963

- STEP
1. Before first contact, obtain temperature reading.
 2. Also before 1st contact, estimate percentage cloud cover.
 3. TIME FIRST CONTACT.
 4. Take constant photos.
 5. See (with small telescope) if Lunar disk is brighter than sunspots.
 6. Measure drop in temperature.
 7. Observe crescents projected by spaces between leaves.
 8. Attempt to observe shadow bands.
 9. Observe Bailey's Beards.
 10. TIME SECOND CONTACT.
 11. Map Prominences.
 12. Map Corona - record its colour.
 13. Observe Sky, can you see shadow?
 14. Photograph Sun (2 photos)
 - * 15. Note appearance ^{brightness} of Lunar disk, can you see structure?
 16. TIME THIRD CONTACT.
 17. Observe Diamond Ring Effect.
 18. Try to see shadow rising.
 19. Attempt to observe shadow bands.
 20. Take Photographs.
 21. Measure rise in temperature.
 22. Observe crescents projected by spaces between leaves.
 23. See (with small scope) if ~~the~~ disk is brighter than Sunspots.
 24. TIME FOURTH CONTACT.

ECLIPSE OBSERVATION PLAN - FOR 7/20/63 - Pg. 2 - Rough Copy

PLAN A - See preceding page #2
PLAN B, "MAINLY CLOUDY" PLAN

1. Photograph Sol when possible.
2. Note darkening of sky & region.
3. Note temperature changes.
4. How thick is cloud cover, ~~apparent~~
5. Photograph region.

PLAN C, "CLOUDY" PLAN

1. Photograph region.
2. Note darkening of sky & region.
3. Note temperature changes.

PLAN D, "RAINING" PLAN

1. Note darkening of sky & region.
2. Note temperature changes.

NOTES

Use different plans when needed.

* - optional (Step 15 plan A)

ECLIPSE PLANNING

7/20/63

ECLIPSE TEST

NO: 7

SUBJECT: ENTIRE ECLIPSE DAY JUNE 21/63

DATE: ~~MONDAY~~ ~~JUNE~~ ~~FRIDAY~~ ~~JUNE~~ ~~23~~ ~~1963~~ ~~SUNDAY~~ ~~JUNE~~ ~~23~~ ~~1963~~

TIME: 13:45 TO 15:30 15:45

NOTES: WEATHER NOT PERMITTING
TO COVER, ETO

Step 1: temp. readings. ✓✓✓

" 2: % clouds. ✓

" 3: First Contact. ✓

" 4: TAKE CONSTANT PHOTOS. ✓

" 5: Cr disk compared to spots. ✓ + 2^o

" 6: Temp drop; measure N ✓✓✓

" 7: Crescents between leaves. ✓✓

" 8: Shadow Bands. ✓

" 9: Bailey's Beads ✓

" 10: Second Contact ✓ - Occurs at 3:14:45

" 11: Prominences. ✓

" 12: Corona - color. ✓

" 13: Observe sky. ✓

" 14: Photo Sun (2 photos) ✓

" 15: Brightness of Cr disk, structure? ✓

" 16: ~~star~~ Time Third Contact. ✓

ECLIPSE Test No. 7 cont'd, Pg. 4
to cover (cont'd)

Step 17: Diamond ring effect. ✓

" 18: Shadow motion. (rising) ✓

" 19: Shadow bands. ✓

" 20: Photograph. ✓

" 21: Measure temp. rise ✓ ✓ ✓ ✓ ✓

" 22: Crescents between leaves. ✓

" 23: Cr disk compared to Sunspots

" 24: Time fourth Contact.

RESULTS OBTAINED:

TOTAL TIME FOR TOTALITY: STEPS:
~~80~~ min. ~~50~~ 5 sec.

excluding step 15
0 min. 50 sec.

Did plan work "O.K."?

Answer: Yes, it did,

apparently,
Totality: Time steps 10-14 inc

Timing: [Time totality too!]

Step 3: 07 sec, Step 16: 06 sec

Step 5: 12 sec, Step 24: 05 sec

Step 8: 35 sec, Time steps

Step 15: 15 sec, six steps only.

ECLIPSE PLAN: Test No. 7 (cont)

Results Pg. 3.

Will this method serve for the actual eclipse?

It will, should indeed. It leaves a lot of "extra" to rest eyes and "talk." It looks A-O-K now.

¶

HELPER & TIMER:
Robert Colton

EXTRA NOTES:

I was wheezing during this test, but was able to go through it successfully anyway.

Ly

Test Considered Successful

ECLIPSE PLANNING - 7/20/63

ECLIPSE TEST No. 8 Subject: Entire E

DATE: ~~Monday, June 24, 1963~~ TUE - 6

TIMES: ~~19:00~~ 06:30 to 21:00; totality at 07:30

NOTES: WEATHER NOT PERMITTING (NATURA

TO COVER:

- | | | | | |
|--------|------------------------------|---------------------------|---------------------------------|--------|
| Steps. | 1. temp. reading | - 7. cres. between leaves | 13. Sky Obs. | - 19.5 |
| | 2. % clouds. | 8. Shadow Bands | 14. Photo. | 20.1 |
| | 3. 1st CONTACT | 9. Bailey's Bls. | 15. Bgtns. of disk - structure? | 21.7 |
| | 4. Photo. | 10. 2nd Cont. | 16. 3rd Cont. | 22.9 |
| | 5. Cr disk comp to Sun spots | 11. Prominences | 17. Diam. Bg. Et. | 23.9 |
| | 6. Temp. drop. | 12. Corona | 18. Shadow rising? | 24.9 |

RESULTS:

~~Timing steps 10-14 inc. only.~~

~~Do not time, min = sec.~~

What are your comments?

How successful, if so, was this test?

The test, in spite of the fact that we had a timer & had to make periodical checks was, successful. TIMER: David H. Levy

ECLIPSE PLANNING

7/20/63

ECLIPSE TEST

No. 9

SUBJECT: ECLIPSE DAY

DATE: SUNDAY, JUNE 30, 1963

TIME: All day.

NOTES: WEATHER NOT PERMITTED

TO COVER: AS FOLLOWS:

07:35 - Arising; ✓

07:35 - 08:45 - Prepare; ✓

08:45 - Eat; ✓

09:00 - Prepare for trip to GRAND

09:15 - Start Trip to GRAND-MA

09:15 - 14:00 - Trip to GRAND MA

14:00 - Sight Selected; ✓

14:00 - 15:15 - get Ready for Eclipse

15:15 - 15:30 - Check Sol. & Program.

15:30. ECLIPSE STARTS, FIRST

(15:28 -) get temp, reading & ck

reading (Step 1 & Step

15:30; Step 3. First Contact; ✓

15:30 - 16:35 Do steps on

following page.

Test 9 (cont'd)

15:30-16:35 - ✓ Do steps follow
 ✓ Step 4 - Take constant photos.
 ✓ Step 6 - Measure drop in temp.
 ✓ Step 7 - Crescents between 16:
 15:45 - 15:55 or 50 - Step 5 - Crd
 & Sunspots. ✓

16:36 - ~~Step 5~~ Step 8 - Shadow B
 16:38:50 - Step 9 - Bailey's Bead
 16:39: - Step 10 - ✓ Second Contact
 16:39:05 - Step 11 - ✓ Map Promin
 16:39:15 - Step 12 - Corona ✓
 16:39:25 - Step 13 - Observe sk
 16:39:35 - Step 14 - Photo, Supl ✓
 16:39:45 - Step 15 - Lundr/Di
 16:40:05 - Step 16 - Third ✓ Cor
~~Step 17 Diamond Ring~~
 Mainly Cloudy - now, 16:40-

16:40-17:00-17:10 -
 ✓ Plan B ^{Step} Photo Sol when pos ✓
 Step 2. Note brightening of sky ✓
 Step 3. Note Temperature ✓
 Step 4: How thick are clouds ✓
 Step 5: Photograph ✓ Region

Test IX (cont'd) pg. 3

Cloudy - now - 17:10 - 17:20

17:10 - 17:25 - Plan C -

✓ Step 1 - Photograph region

✓ Step 2 - Note brightening of sky & region

✓ Step 3 - Note temp. change

Raining - now - 17:25 - 17:40

17:25 - 17:40 - Plan D ✓

Step 1 - Note darkening of sky & region ✓

Step 2 - Note temp. change

Clears up - 17:40.

17:40 - 17:45 -

Plan A -

Step 20. Photograph.

Step 21. Temp. rise.

17:45 - Step 24. 4th Contact

17:50 - Prepare for return trip

18:00 - Return to Montreal.

18:00 - 22:00 - Trip home to Mon.

22:00 - 22:15 - Get ready for bed

22:15 - Retire.

Test IV (conc'd) pg. 4.

RESULTS:

~~Totaling steps 10-14 inc. - mid~~

What do you think of test?

The test is the most successful of the nine held so far. I am very pleased with the results of this test, which are:

The present program can be used for the actual eclipse.

This test indicates that the next test (10) will be held in about two weeks.

Test considered success

TESTS 7-9 combined.

Program is A-O-K.

TESTS 1-9 combined

Entire Program is A-O-K

ECLIPSE PLANNING

July 20, 1963

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FINAL PLAN FOR OBSERVATION OF THE JULY TWENTIETH SOLAR ECLIPSE

PLAN A:::::To be followed when the skies are clear and when the Sun is visible for a reasonable period of time

- Step No. Observations and Recordings
- BEFORE FIRST CONTACT
- 1 Obtain reading on temperature.
 - 2 Estimate the percentage of cloud cover in the area.
 - 3 TIME FIRST CONTACT.
 - 4 See (with a small telescope) if Lunar Disk is brighter than any visible sunspots.
 - 5 Take frequent photographs of the Sun.
 - 6 Measure the drop in the temperature.
 - 7 Observe crescents projected by spaces between leaves. Steps 5, 6, and 7 should be performed frequently during the partial phases.
 - 8 Observe the Eclipse Shadow Bands.
 - 9 Observe Bailey's Beads or the Diamond Ring Effect.
 - 10 TIME SECOND CONTACT.
 - 11 Map the Corona of the Sun and Record its colour.
 - 12 Map the prominences.
 - 13 Observe the sky. Can you see the Lunar Shadow?
 - 14 Photograph the Sun twice.
 - 15 If time allows, note appearance and brightness of the Lunar Disk. Can you see any Lunar structure?
 - 16 TIME THIRD CONTACT.
 - 17 Observe the Diamond Ring Effect, and/or Bailey's Beads.
 - 18 Observe shadow rising in east.
 - 19 Observe the Eclipse Shadow Bands.
 - 20 Take frequent photographs. (Steps 20, 21, and 22 -- see PLAN B)
 - 21 Measure the rise in the temperature. ((note under step 21))
 - 22 Observe crescents projected by spaces between leaves.
 - 23 See (with a small 'scope) if Lunar disk is brighter than any sunspots.
 - 24 TIME FOURTH CONTACT.
 - 25 Obtain reading on temperature.

PLAN B:::::To be followed should it be or turn mainly cloudy.

- 1 Photograph the Sun when possible.
- 2 Note darkening and brightening of sky and region.
- 3 Note temperature drop and rise.
- 4 How thick is cloud cover (estimate)?
- 5 Photograph region.
- 6 Can you see shadow?

PLAN C:::::To be followed should it be or turn cloudy.

- 1 Photograph region.
- 2 Note darkening of sky and region, and brightening.
- 3 Note temperature changes.

PLAN D:::::To be followed if it should rain.

- 1 Note darkening and brightening of sky and region.
- 2 Note temperature changes.

NOTE: Use various plans when needed and try to look for breaks in clouds if they are present.

---David H. Levy

ECLIPSE PLANNING - 7/20/63

ECLIPSE TEST No. 10

SUBJECT: ECLIPSE DAY

DATE: TUESDAY, JULY 9, 1963

TIME: ALL DAY NOTES: WEATHER NOT PERMITTED

TO COVER: 07:00 - Arising.

07:00-07:50: Prepare. 17:30 - Eclipse ends.

07:50 - Eat. ~~18:00~~^{17:45} - Return to Montreal.

08:15 - Prepare. 21:45 - Back home.

09:15 - Trip to Grand-Pere. 22:00 - Retire.

14:00 - Sight Selected.

SPECIAL EVENTS:

14:00 - Prepare.

15:30-16:00 - Plan B in effect

15:30 - Eclipse Starts.

16:00-16:30 - Plan C in effect

16:39 - Totality.

16:20-16:38 - Plan D in effect

This, if successful, 16:38-17:30 - Plan A in effect

will be the last of the ten tests. The next will be the real event.

Please refer to FINAL PLAN for steps.

RESULTS: Is final program OK?

 Yes; it will be used. No; it will have to be

Test considered successful, changed.

Remarks: The test was not as smooth as # 9, before the eclipse itself. But starting from about 1 hour before the eclipse began, it really went well. Results: A very low

successful test.

We ~~unexpected~~ unexpected
timed totality (we decided
so at the last minute), Total
(steps 10, 11, 12, 13 & 14) lasted
48 seconds. HELPER + TIMER:
Colton, Robert Colton.

The Final plan will be
used.

Analysis of tests 9 & 10

Plan is good for eclipse.

It gets me busier as totality
approaches, instead of a "sudden
action". Plan O-K.

Analysis of tests 7-8-9-10

Plan OK, worked 4 times

A-OK, It should work fine.

Analysis of tests 1-10 inc.

All plans A-OK.

Will be used.

All 10 tests were
successful.

Tests 7-10 inc. were unquestion-
ably the hardest, but
they were all successful.

ECLIPSE PLANNING

July 14, 1963

SUMMARY OF ECLIPSE PLANNING

AND

SOME FINAL NOTES FOR THE ECLIPSE: JULY 20, 1963

SUMMARY

- Page 1.....First Rough Plan for the eclipse. 17 step
- Page 2.....Partial Eclipse Plans for Denver...Substi
These plans were drawn up just in case
we were unable to go to Grand'Mere to see
Eclipse.
- Page 3.....Notes.These and the notes on
Pages 4, 5, and 6 contain valuable information
on the eclipse. The exact times of contact
will not be obtained, in this eclipse,
by us, due to the fact that our watch
is not accurate to the nearest millisecond
so we cannot, especially on Contacts 1 & 2
obtain very accurate contact readings.
- Pages 7, 8, and 9 involve the first of the ten eclipse
tests.
- Page 10....contains plans that were called (are called
really) B, C, and D later on in the text.
planning notes.
- Page 11....This is not too meaningful right now
because we are not sure if the camera we
will be using (it may not be a Mibolta-16)
can use a roll taking 20 pictures, and if
we can obtain such a roll. However,
- Page 12.....is valuable.
- Page 13.....first summary of planning.
- Page 14.....Analysis of first eclipse dream. Two other
dreams, incidently, were remembered that
occured after this one. One occured in
late June and involved seeing a total
eclipse in Denver, but we awoke before
the total phase came along. The other
occured about July 8 and also involved
this eclipse. But details cannot be remembered
too well about this dream.
- Pages 15, 16, and 17.....See notes above referring to
4, 5, and 6. These pages, in other words,
also contain valuable information about
the eclipse.
- Page 18....Eclipse Test No. 2.
- Pages 19, 20, 21, 22.....Eclipse tests no. 3, 4, 5, 6,
ively.
- Page 23.....These times were helpful when people
asked us how long the eclipse would be
in a certain city. The tests were
analysed in the empty space below
and average times for each totality stage
determined. See next page for averages

ECLIPSE PLANNING
SUMMARY AND FINAL NOTES; CONT'D.
PREPARED July 15, 1963

The averages are as follows:
Second Contact: 4 2/3 seconds.
Mapping Prominences: 12 1/6 seconds.
Mapping and recording colour of the corona: 10 1/3 seconds.
Observing the sky: 9 2/3 seconds.
Photography: 8 2/3 seconds.

- Page 24.....This page discusses the possibility of participating in a certain program. The letter appears on this page and on the other side the answer appears. We will try both parts.
- Page 25...This brings in information about the shadow. It also brings to light the fact that we may be able to see the shadow if we stay in or near Montreal.
- Page 26...This is the second Rough Plan for observing the eclipse. 24 steps. On
- Page 27, we print plans B, C, and D. Plan B is for Mainly Cloudy skies, Plan C for cloudy skies, and plan D for rainy skies.
- Page 28...Eclipse Test No. 7.
- Pages 29 and 30:are also this eclipse tests which was two hours long.
- Page 31 is Eclipse Test No. 8, a copy of No. 7. It was held in our hospital room, while test 7 was held in the Home's Astronomy room. Tests 1-6 inc. were all held in Room Two of Peshkin Bldg. .
- Pages 32, 33, 34, and 35...Eclipse test No. 9..all day.
- Page 36.....This is the all important FINAL PLAN for observing the eclipse. It has all four plans.
- Page 37.....Test 10. A copy of Test 9. It tested the final plan, and it is good, and can be used for the eclipse. All ten tests were very successful. Now it is Sunday, July 14, Only six days remain until the critical moment arrives. Will this plan work? This plan, remember, is a general one.

The Plan that will be used this eclipse is a very general/~~plan~~. It will 'pave the way' for other eclipses, that we observe. Whether the next one is the 1972 eclipse, or an earlier one, this eclipse will give us the experience needed to make a more detailed study on the next eclipse.

Page One itself took planning; mental planning, that lasted a few days. Officially we started planning for this eclipse on April 28, 1963, almost three months before the eclipse occurs.

ECLIPSE PLANNING
SUNDAY, JULY 14, 1963
SUMMARY & FINAL NOTES

And now...six days left and almost all is ready..

FINAL NOTES

During the eclipse, remember that the eye must be protected during the partial phases.

It is also a must that we only look at the Sun when necessary.

The Sun, on July 20, at 4:39 P.M. EST., will be in the western part of the sky.

So, it will be necessary to find a location where no trees block the way.

But remember about the crescents between leaves.

Trees right behind us will help.

In conclusion, remember that the eyes MUST be protected. The cardboard projection method of viewing the eclipse indirectly should be used.

A pinhole in a piece of cardboard will ~~help~~ carry the Sun's rays and project them on a white surface.

A 35mm camera will be used as well as the Minolta-16.

There are six days left, and everything is now ready for the eclipse. All systems are 'go' for observation of this phenomenon, and everything appears READY. Just a few last minute details will be performed in Montreal one day before the eclipse. The only real thing left now is to hope.....and pray..... for a clear sky and a successful fulfillment of our eclipse program.

David H. Levy

ECLIPSE PLANNING
COMPLETED —

READY FOR ECLIPSE

July 14, 1963

David H. Levy

Special Personal notes
behind this page

04

ECLIPSE DREAMS

And now... six days left and almost all is ready.

1, 2, 3 - before

4, 5, 6, 7 - after

Eclipse dreams

(all before Aug. 10)

COMPLETE D - ECLIPSE PLANNING

READY FOR ECLIPSE

July 14, 1953
John Bond K. Bond

ECLIPSE GENERAL ANALYSIS

A. NOTES WRITTEN JULY 20, 1963
by David Levy

CONTACTS

First: 15:34:00. EST
Second: Approximately 16:41.
Third: About 16:42.
Fourth: Mainly cloudy at the time-- not recorded.

TEMPERATURE READINGS

EST	- EASTERN STANDARD TIME	
13:53		93 °F.
14:09		87
14:23		96
14:30		100
14:45		99
14:59		95
15:23		87
15:37	After 1st cont.	90
15:44		83
14:50		81
16:05		88
16:16		80
16:25		78
16:44	After 3rd cont.	72
16:55		76
17:04		75
17:10		72
17:21		72
17:33		73
17:38		73

CLOUD COVER READINGS

15:36	25%
15:50	50%
16:07	50%
16:16	80%
16:53	50%
16:58	70%
17:04	75%
17:10	80%
17:21	85%
17:29	85%
17:38	80%

All are estimates

Some remarks

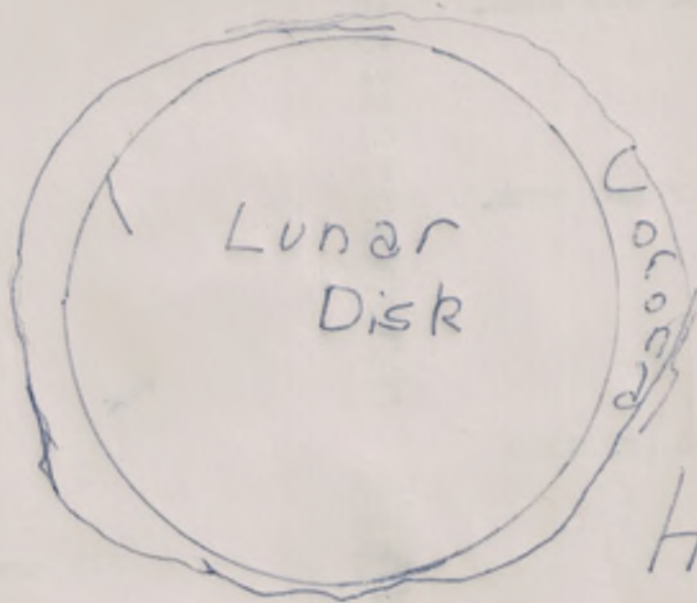
16:44		Clouds turning reddish in east
16:43	} during totality	Clouds were really, really black.
16:43		A night bird started chirping.
17:58		Plan adopted for cloudy skies

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ECLIPSE ANALYSIS

B: Totality

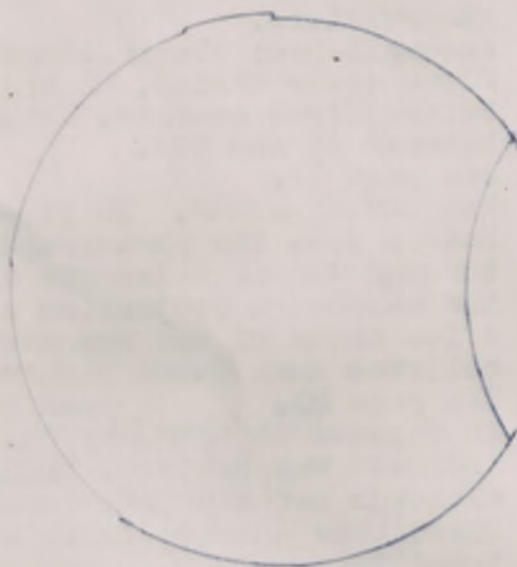
THE MOMENT
OF TOTALITY



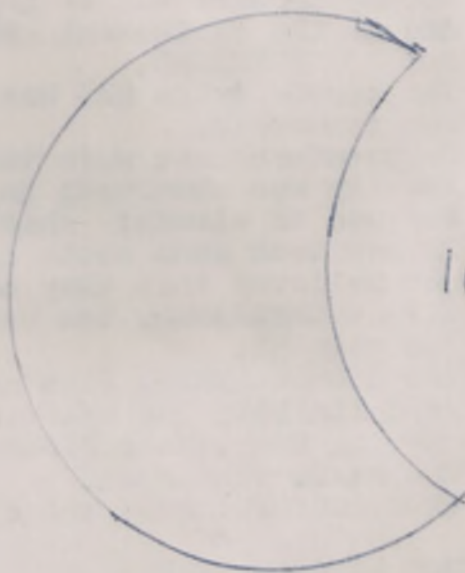
Hazy

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ECLIPSE ANALYSIS
C. Two Partial Phases



15:44



16:08 app.

ECLIPSE ANALYSIS

D. ANALYSIS OF STEPS

Please refer to page 36 for the Final Plan.

- | Step | Observations. |
|------------------|--|
| 1 | Accomplished; see readings on page 41. |
| 2 | Cloud cover varied. On the average, before first contact, cloud cover was between 25 and 50%. |
| 3 | See page 41. |
| 4 *
5 | NOT ACCOMPLISHED. No sizeable telescope available. Mother took the photographs, I focused the Sun through Ranger telescope and Paul Astrof held the cardboard projection sheet. Mother took a few shots of the Sun directly, but it is not believed that these came out. |
| 6 | See page 41. A drop from 100 (in the Sun) to 72 degrees at totality and a bit after third contact was noticed. Drop, therefore, was, although greatly influenced by clouds, 28 degrees. |
| 7. | These were spotted quite nicely at about 75% totality. |
| 8. * | Attempted, but NOT ACCOMPLISHED. Too cloudy. |
| 9. | Bailey's Beads were observed; beautiful. |
| 10. * | Second contact was estimated; see page 41; but due to the excitement and tension, was NOT ACCOMPLISHED. |
| 11. | The corona (page 42) was yellowish white and was fantastic. |
| 12. * | No prominences were visible; NOT ACCOMPLISHED. |
| 13. | The sky was observed; no stars or planets because of clouds; shadow observed. |
| 14. | Mother took some shots of totality; it is not believed that they came out. |
| 15. * | NOT ACCOMPLISHED. Too hazy. |
| 16. | See page 41. |
| 17. * | NOT ACCOMPLISHED. Just not visible due to haze. |
| 18. | We definitely saw the shadow 'rising' and moving away. We noticed extreme darkness to the south southeast. |
| 19. * | NOT ACCOMPLISHED; too cloudy. |
| PLAN C. | |
| 1. * | NOT ACCOMPLISHED. |
| 2. | Only We noted the sky getting brighter after totality, and it got suddenly brighter just after third contact. |
| 3. | See page 41. |
| PLAN A. Step 25. | See page 41. |

Out of 23 possible steps, 8 were not covered. This indicates quite successful fulfillment of the plans in use.

ECLIPSE OF THE SUN:
 JULY 20, 1963
 THE STORY

On October 2, 1959, a party of three (Mother, Gerry and I), at six o'clock in the morning, went to the lookout to observe the partial eclipse of the Sun that day. The first half of the eclipse was eclipsed by clouds, but by the last quarter clouds had broken and the eclipse was plainly visible. When I got back home I did a little bit of research on the subject of eclipses.

That eclipse was one of the contributing factors that got me interested in Astronomy in the first place. I checked a map that day and said, to myself, that I was going to try to see the 1963 eclipse. The totality path seemed to cover the Montreal area.

About $3 \frac{3}{4}$ years followed, with two Lunar Eclipses occurring during that time. I missed one because I slept through it. The 1961 Eclipse was fine--that last part. The first was obscured by clouds. Another eclipse of the moon I missed completely without even knowing of it.

At the end of April I started planning for this eclipse. Planning reached a peak at the times when eclipse tests 2, 3, 4, 5, and 6 were being held. After school let out a lot of last-minute planning was done. Plans were also made for my trip home. If it were not for the eclipse, I wouldn't be going home in the first place, and by this time we were all fully aware that the path of totality would run slightly southeast of Montreal.

Excitement mounted in my mind as the eclipse neared. Two months---one month---at about this time the home let me know that I would be going home for ten days--- from July 18 to July 29. The climax was nearing fast. July 18--my trip home. It was a big day---it was my first airplane flight alone. It did seem, however, that Mom and Dad were right by me--although they were really in Montreal waiting for my arrival. At 7:30 or so I landed in Montreal. That night was a busy one. We made plans that Mother would do the photography, and Father the timing.

One day left. Eclipse enthusiasm was widespread in Montreal. Today I heard the first weather forecast on the phone that mentioned the eclipse. "Chances of viewing eclipse in southeastern Quebec---very poor."

I retired relatively early Friday night with a prayer that the skies would be clear and my observations successful.

Saturday dawned bright and hazy. Of course we had no trouble in obtaining weather forecasts---the radio stations and newspapers had enough forecasts to keep us busy.

At about 10:00 A.M. We left home. The skies were cloudy. The clouds grew thicker as we went on to our sight. We had decided to change our location to Lake William, near Thetford Mines, on the south shore.

We stopped to eat lunch on the way. Clouds were breaking.

At T-2 hours or so we arrived at our location. We started to take temperature readings and cloud cover readings. The team composed of 4 members--Mother, Father, Paul Astrof, (a friend, of mine) and I were there.

We paused at T-1hour to first contact for a coke.

We focused the Sun through RANGER, a little refractor I picked for ~~XXXX~~ \$3.00. It was whole. Clouds then obscured the Sun. However, just before first contact, clouds broke and the Sun came out. A few minutes later we ~~observed~~ focused the Sun through Ranger and photographed it. First contact---any second now. Suddenly a slightly hazy patch nicked one limb of Sol. We knew it was first contact. Within a half minute the hazy patch was a clear-cut nick in the Sun. Shortly after Mom saw it through filters. That first contact was very gratifying to me. It seemed to climax all those hours of planning.

The nick soon grew into a good bite. Every now and then clouds obscured it, but we were able to see most of the first half.

At about 50% we noticed that the Sunshine on the mountains wasn't quite as bright as before.

Paul soon noticed that clouds in the east were turning orange. Things were getting quieter than usual; and a wedding that had been taking place nearby broke up. I doubt that the eclipse had any thing to do with this wedding party, however. But people stopped to look up at a now crescent-shaped Sun.

The Sun now took the shape of a clipped toenail. We looked under a tree, and noticed that every open space in the shadow of the tree took the shape of a crescent. Big crescents, small crescents, all sizes of crescents.

The crescents as they looked between the leaves.

The crescent Sun grew smaller. It grew thinner, and these once-orange clouds in the east were now definitely red.

The atmosphere showed a definite quieting down of everything. Birds were beginning to stop chirping.

The entire region took a very, very eerie effect.

But it was apparent that a race was starting. A race between clouds and the Lunar shadow, which was coming --- fast.

The clouds that ~~skipped~~ broke to allow a splendid view of the partial phases were fast approaching the Sun. It was quite certain that if they covered Ole Sol now,

we would miss all of totality.

We noted the partial phases and compared them to maximum phases in other cities. We noted how Denver's view would be at about 50% eclipse. -

Skies were darkening rapidly. A family group out on a cruise in their motorboat stopped cruising and looked at the thin crescent of a Sun. Only two percent of the Sun remained.

Totality was almost upon us. Daddy remarked, "Well, David, you're going to see ~~the~~ it after all." Bailey's Bead's appeared, and we photographed them. All of a sudden ~~it got dark~~ darkness swept upon us. Oh, what a sight! Something that is not only beautiful. Gorgeous cannot describe it. It was eerie. The clouds that had been white, then orange, and then red, were now black. Blacker than thick thunderstorm clouds.

It was too cloudy to see any stars or planets. The corona was fantastic. Absolutely magnificent. And very eerie. At plus 45 seconds or so, a night bird ~~strangely~~ started to sing. That was the only sound that broke the silence of the total eclipse.

But as quickly as it got dark, it brightened up again. And, within one minute after third contact, clouds covered the Sun. We only got one more glimpse at a crescent Sun after that.

We ate dinner during the second half of the eclipse. We took our temperature and cloud cover readings also. When the eclipse ended (we missed fourth contact) we went home. We arrived back at the house at about 10:30 P.M. EDT.

That day was followed by about two weeks of rest---while I was home, I didn't do anything but immediate necessary analysis. The analysis was started after I came back to JNH&C.

And now, the analysis is over. When we come to think of it, the eclipse was really successful. "We obtained first contact, which was important. We saw totality, which was all-important." So said my father, and I agree with him one hundred percent. We saw the Moon's shadow. We saw it as it travelled on, southeastward, to complete its course.

The eclipse meant a lot to me, personally. If the eclipse's path did not pass just northeast of Montreal, and southeast of it, ~~as~~ I wouldn't ~~be~~ have gone most likely.

The Almighty had planned it that way. Just as he has planned all future eclipses, which help to demonstrate the greatness and glory of the Lord.

T H E E N D

Aug. 5, 1963