

SCIENTIFIC AMERICAN

1955

- May 42 THE SPIRAL STRUCTURE OF THE GALAXY / W. W. Morgan
 June 40 RADIO WAVES FROM THE SUN / J. P. Wild
 126 THE AMATEUR SCIENTIST: AN OBSERVATORY BUILT BY A HIGH-SCHOOL SENIOR
 July 106 THE AMATEUR SCIENTIST: AN UNUSUALLY STEADY TELESCOPE MOUNTING
 Augu - - - - -
 Sept Iss THE PLANET EARTH
 194 THE AMATEUR SCIENTIST: ABOUT THE MAKING OF A CORONAGRAPH TO VIEW THE PROMINENCES OF THE SUN
 Octo - - - - -
 Nove 72 "EMPTY" SPACE / H. C. van de Hulst
 136 THE AMATEUR SCIENTIST: A MOVING MODEL OF THE SOLAR SYSTEM
 Dece 29 THE SATELLITE PROJECT / Homer E. Newell
 124 THE AMATEUR SCIENTIST: A FOCAL-TEST RIG FOR SHORT-FOCUS MIRRORS; A SHORT-FOCUS REFRACTING TELESCOPE WITH A MICROSCOPE EYEPIECE; AN AMATEUR'S DEVICE FOR CUTTING WORM GEARS; 1955 SPRINGFIELD MEETING

1956

- Janu - - - - -
 Febr 36 YOUNG STARS / Adriaan Blaauw
 Marc 81 ELECTRONIC PHOTOGRAPHY OF STARS / William A. Baum
 Apri 52 THE CLOUDS OF MAGELLAN / Gerard de Vaucouleurs
 160 THE AMATEUR SCIENTIST: A STELLAR SPECTROSCOPE EMPLOYING A LIQUID PRISM; STEREOSCOPIC VIEWS OF THE MOON
 May - - - - -
 June 119 THE CHEMISTRY OF JUPITER / Francis Owen Rice
 157 THE AMATEUR SCIENTIST: CONCERNING THE PROBLEM OF MAKING SHARPER PHOTOGRAPHS OF THE PLANETS
 July 32 THE RADIO SKY / John D. Kraus
 Augu - - - - -
 Sept Iss THE UNIVERSE
 259 THE AMATEUR SCIENTIST: ABOUT A DIFFRACTION-GRATING SPECTROGRAPH MADE OF MATERIALS COSTING LESS THAN \$100
 Octo 56 A NATIONAL RADIO OBSERVATORY / Bart J. Bok
 Nove 41 THE ARTIFICIAL SATELLITE / James A. Van Allen
 Dece 40 THE CIRCULATION OF THE ATMOSPHERE / Victor P. Starr

1957

- April 80 THE AGE OF THE SOLAR SYSTEM / Harrison Brown
 138 SUN CLOUDS AND RAIN CLOUDS / Walter Orr Roberts
 May 170 THE AMATEUR SCIENTIST: A SIMPLE EQUATORIAL MOUNTING FOR A SMALL TELESCOPE
 June - - - - -

SCIENTIFIC AMERICAN

1957

July 48 THE ABSORPTION OF RADIO WAVES IN SPACE / A. E. Lilley
Augu - - - - -
Sept 233 THE AMATEUR SCIENTIST: HOW TO MAKE AN EXTREMELY ACCURATE
CLOCK BASED ON THE VIBRATION OF A QUARTZ CRYSTAL
Octo 141 THE AMATEUR SCIENTIST: THE SURFACE DETAILS OF THE SUN
ARE REVEALED BY A SMALL TELESCOPE AND ARTFUL PHOTOGRAPHY
Nove - - - - -

HOW TO COLLIMATE A REFRACTING TELESCOPE

The owner of a refractor who wants the best performance from his instrument should collimate or align its objective from time to time. For this adjustment, most refractors have three or four push-pull screws fastening the objective cell to the tube.

Many amateurs test collimation by looking at the diffraction rings surrounding a star to see if they are central. The following method may be carried out in daylight and is much easier. With care, it has nearly the same sensitivity as the diffraction-ring method.

The only equipment needed is a flat mirror, about 2" by 3", from which the silvering has been removed over a central area about $\frac{1}{4}$ " across. The mirror does not have to be of optical quality.

If the instrument is to be adjusted indoors, its objective end should be pointed toward a sunlit window. Cap the objective so that no light can enter it from the front, and remove the eyepiece, leaving the drawtube in place.

Hold the mirror some 12" or 18" back of the drawtube to reflect light up the telescope tube, and look through the clear spot in the mirror toward the objective. You will see a circular white spot (this is the drawtube opening reflected from the back of the objective) and also the reflection of the hole in the mirror. If the objective is properly squared on, there is only one white spot visible, and it is concentric with the drawtube and also the objective.

But if the objective is not accurately collimated, two smaller white spots will appear alongside the larger one. These are the three reflections from the three convex surfaces of the objective lens components. In this case, turn the adjusting screws in such a way that the objective is brought closer to you on the side where the smaller spots appear. Repeat this process until all that is seen is one large white spot, containing both smaller ones, and concentric with the hole in the mirror.

These directions apply to objectives of the Fraunhofer type. For a Steinheil-type objective, one with the flint component in front, the adjusting screws must be turned in the opposite direction, pushing away from you the side of the objective on which the smaller spots appear.

With a 4-inch refractor, it is hard to align the white spots closer than about $\frac{1}{8}$ ". But if the telescope is to be used for close double stars, the adjustment must be made with all possible care.

No particular novelty can be claimed for this method of squaring on an objective, for it was in use as early as the 18th century. It does not seem to be as widely known among amateurs as it deserves to be.

CHESTER J. SMITH
9775 Burgos Ave.
Oakland 5, Calif.

Coast Instrument, Inc.,
4811, Long Beach Blvd.,
Long Beach 5, Calif.

TRECKER-PATHFINDER EQUATORIAL MOUNT

\$74.50

This mount will accommodate 4-inch to 8-inch telescopes. Complete
Standard 36-inch height - massive $1\frac{1}{2}$ -inch steel shafting.
This amazing EQUATORIAL MOUNT is just what the doctor ordered for
mounting that homemade telescope you labored so hard to finish.
Now you can purchase a beautifully constructed, highly rigid equatorial
mount, COMPLETE, for your own telescope as economically as if you
had built it yourself. This terrific mount is made entirely of metal;
all of the moving equatorial parts are polished to work with maximum
ease. Legs, head, and counterweights are all removable for easy storing.
The saddle allows partial rotation of your tube. One of the more important
features in this mount is that the polar axle is extended for ease in
attaching a clock drive and/or setting circles, which may be added at
any time. The TRECKER-PATHFINDER mount also has a beautiful, chip-
resistant finish. Taking all of these unusual features into consideration,
this is truly one of the best DOLLAR-FOR-DOLLAR values ever offered.

MIRROR CLEANING KIT

\$2.35

Your mirror is the heart of your reflector. Protect it and prolong
perfect viewing with our professional mirror cleaning kit. Use according
to instructions and you'll be pleasantly surprised at the performance
your present mirror will give. This kit is also excellent for coated
optics - will not damage hard-coated lenses. postpaid

NEW SOLAR PROJECTOR FOR REFLECTORS.

\$37.95

View the sun without hazard to your eyes. The new Dark's Solar
Projector (for which we are sole distributors) provides remarkably clear
images on special glass screen (not ground glass). The size of the sun's
image may be varied by a flick of your finger. Ultra-light fiberglass
construction. Quick attaching - fits all sizes of reflectors from 5" up.
Use your own oculars and focusing mount. No alterations necessary on most
telescopes - simply place in position and tighten one thumb nut. Takes
only 10 seconds! When ordering, specify the outside diameter of your
telescope tube. f.o.b.

P. 441

O. Magnusson,
14560, West 52nd Avenue,
Arvada, Colorado.

MAGNUSSON HEAVY-DUTY MOUNTING

Look at these features -

1. Latitude adjustment.
2. $1\frac{1}{4}$ " x 17" declination shaft.
3. Ball-Bearing polar-axis shaft, $1\frac{1}{2}$ " on north end - 1" on south end x 12" long. Suitable for clock drive.
4. High tensile aluminum black-finish castings, with solid-steel shafts.

over

5. 11-pound cast-iron balance weight.
 6. Locking screws on polar and declination axles.
 7. 5" brass setting circles with pointers.
 8. Weight approximately 38 pounds complete.
 9. Custom-made saddle to fit your telescope.
- State size of tube, up to 12". Tripod not included.

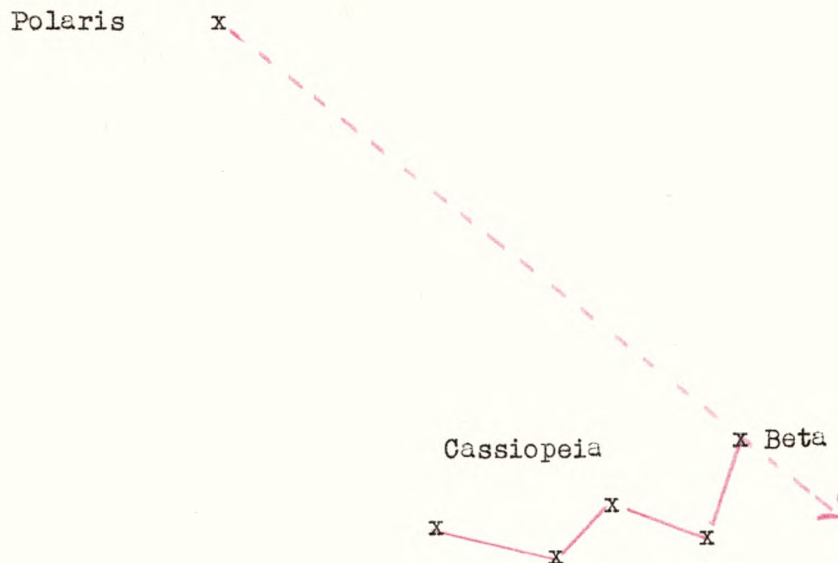
With setting circles
 Without circles

\$125.00 f.o.b.
 \$96.00 f.o.b.

SETTING CIRCLES - State hole sizes.

	Aluminum	Brass
5" circles, set of two	\$12.00	\$15.60
6" circles, set of two	\$13.00	\$16.90
8" circles, set of two	\$20.00	\$26.00

HOW TO TELL THE TIME BY POLARIS AND CASSIOPEIA



The constellation of Cassiopeia has a utilitarian feature of interest. It makes an excellent timepiece and can be regarded as an illuminated clock. With a little practice it is possible to determine the time of night with approximate exactness by observing the changes in the position of its stars with reference to the Pole. This information should be of interest and service to Boy Scouts.

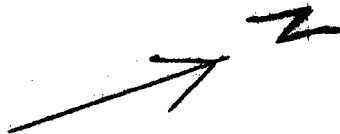
The line through Polaris and Beta Cassiopeia points about exactly to the vernal equinox. It may, therefore, be used as an indicator to estimate the Sidereal Time, remembering that it is above the Pole at sidereal noon, to the left at 6 hr., below at 12 hr., and to the right at 18 hr. With a little practice it is possible to read sidereal time from this celestial hour hand within about fifteen minutes. Then by recalling that the sidereal clock agrees with the mean solar clock on March 22nd (or thereabouts) and gains at the rate of two hours a month, one can pass to ordinary solar time.

(From "Field Book of the Skies")

It is suggested that one make a small cardboard disc of the 24-hour celestial clock with sidereal noon at the top, as mentioned above, and with a moveable hand that extends well beyond the disc. By holding this disc up to the sky so that it is centred on Polaris and by pointing the hand to Beta Cassiopeia, one can determine sidereal time. It is then simply a matter of subtracting the correct figure to obtain solar time. One can also draw up a table of the hours to be subtracted for each month and also for half-months and quarter months.

Example: Suppose that on the evening of November 22nd when one looks at the sky the hand of the celestial clock points to 23 hours. Since 8 months have elapsed since March 22nd, subtract 16 hours to obtain solar time. It is therefore 7.00 p.m. solar time. Later the same night when the hand points to 2 hours it would be 10.00 p.m. solar time. And so on.

MONTREAL



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R.A.S.C. Observatory

Royal Victoria Hospital

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X

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Laurentien Hotel

MOUNTAIN

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METCALFE

MANSFIELD

MCGILL COLLEGE

UNIVERSITY

WINDSOR

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

presents its

ELEVENTH ANNUAL STAR NIGHT

Wednesday, September 12, 1956

8.00 p.m.

WESTMOUNT PARK
(Corner Western and Melville Avenues)

MASTER OF CEREMONIES: Charles M. Good
President, Montreal Centre, R.A.S.C.

OBSERVATION PROGRAMME:

Six different types of celestial objects have been selected for observation - a satellite, a planet, a double star, an open star cluster, a globular cluster and an external galaxy.

The public is invited to view these objects through telescopes owned and operated by members of the Montreal Centre. (See reverse side of programme for brief notes on the objects chosen.)

ILLUSTRATED TALK: "The Planet Mars"
Frank J. DeKinder
Director of Observations, Montreal Centre

MOVING PICTURES: "Exploring Space"
"The Solar Family"
Films shown by courtesy of Province of
Quebec Cinephotography Service.

QUESTION & ANSWER PERIOD: Conducted by Henry F. Hall, Principal
Sir George Williams College

The audience will be given the opportunity of handing in written questions which will be answered from the platform.

NO ADMISSION CHARGE

The thanks of the Society are extended to
the City of Westmount for its help and
encouragement in planning this event.

Membership in the Royal Astronomical Society of Canada is open to anyone interested in astronomy. Information and application cards can be obtained at the programme table under the green light.

The Moon - Our Nearest Neighbour

Distance: 238,000 miles

The Earth's satellite, the Moon, is only 238,000 miles away - so close that its craters, "seas" and mountains can be seen through even a small telescope. The Moon has no light of its own but simply reflects the sunlight that falls upon it. The most striking views are obtained when it is at about its first or last quarter, when the lunar mountains cast long, dark shadows which give a fine effect of contrast with the sunlit parts.

The Planet Mars

Distance: 35-235 million miles

The nine planets that revolve about the Sun also shine by reflected sunlight. The orbit of Mars is outside that of the Earth. Its distance from the Sun is 141 million miles. Its distance from the Earth varies from 35 million to 235 million miles and its brightness changes accordingly. When Mars is nearest, it is conspicuous in its fiery red but when farthest away it is no brighter than Polaris. Because of its distance, a large telescope is needed to see much of its surface detail.

Albireo - a Double Star

Distance: 410 light years

A star is a huge mass of glowing gases. Our Sun is a star, the nearest star to us. All other stars are so far away that even through telescopes they are pinpoints of light. A new unit, the light year (the distance that light travels in a year at a speed of 186,000 miles a second) is needed to measure their distances. The telescope reveals that many stars are double stars, revolving about a common centre of gravity. Albireo in the constellation of Cygnus is 410 light years away. One star of the pair is yellow and its smaller companion is blue.

Star Cluster in Perseus

Distance: 4,300 light years

The stars form pleasing patterns in the sky which man has divided into groups called constellations. There are closer aggregations of stars called clusters. Perhaps the most familiar is the Pleiades which is visible to the unaided eye. Binoculars or low power telescopes reveal many more. One of the loveliest clusters is in the constellation of Perseus. With a low power it appears "Like a scattering of gold dust".

Globular Cluster in Hercules

Distance: 34,000 light years

On the outskirts of our galaxy are about a hundred huge spherical aggregations of untold numbers of stars, so compact towards the centre that even with a telescope it is difficult if not impossible to distinguish individual stars. The finest globular cluster in the northern hemisphere is M13, the Hercules cluster. It contains not less than 100,000 stars, each star on the average about one light year from the next. Another fine globular, M2 in the constellation of Aquarius, lies at a distance of 45,000 light years.

Great Nebula in Andromeda

Distance: 1,600,000 l.y.

In our galactic system, the Milky Way, are billions of stars, some like the Sun, some thousands of times larger, some smaller. Far beyond our own galaxy are hundreds of thousands of other stellar systems. One of the nearest is the Great Nebula in Andromeda, a spiral galaxy about 1,600,000 light years away. It can be seen as a light fuzzy patch, the only object beyond our galaxy that is visible to the unaided eye. Photographs taken with the 100-inch reflector at Mount Wilson and the 200-inch at Mt. Palomar resolve it into myriads of stars.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

The 39th Annual General Meeting of the Montreal Centre will be held in the Macdonald Physics Building of McGill University at 8:15 p.m. on Thursday, October 24th, 1957.

A G E N D A

1. Report of officers for the session 1956-1957.
2. Nomination of officers and members of council for 1957-1958.
In accordance with the constitution the present council nominates the following slate of officers and council members:

Hon. President	- Mr. G. Harper Hall
Hon. Vice President	- Dr. A. N. Shaw
President	- Mr. A. B. MacLennan
Vice President	- Dr. T. F. Morris
Secretary and Recording Secretary	- Mr. E. E. Bridgen
Treasurer	- Mr. Frank W. Baker
Librarian	- Mr. Charles M. Good
Director of Observations	- Mr. Frank DeKinder
Assistant Director of Observations	- Miss I. K. Williamson

Council members: Mr. G. Baron; Mr. W. H. Birtles; Mr. E. A. Edwards;
Dr. Charles Fox; Mrs. C. Jeffrey; Mr. C. B. Moxon; Mr. Gordon Pender;
Mr. W. A. Warren; Mr. G. Wedge; Dr. D. E. Douglas (Past President).

3. Any other business.
4. After the termination of business the retiring President will deliver a lecture entitled:

Three Years in Retrospect
(This will be illustrated with colour slides.)

After the lecture the meeting will become a social evening. Coffee and refreshments will be served and members will have the opportunity of renewing old friendships. Will members who wish to help with the refreshments please telephone Mrs. Zorgo at Hu. 8-3525? All members and their friends are cordially invited to attend the meeting.

Our National Headquarters have drawn up a new constitution for the Royal Astronomical Society of Canada. Some of the important clauses have been reproduced in the enclosed circular. The annual membership fee of \$3.00 per member has been increased to \$5.00 except for students attending full time at educational institutes. For these the fee remains at \$3.00.

On November 14, 1957, Dr. Peter M. Millman will deliver an address to the Society entitled "The World Looks at the Earth."

Charles Fox, Secretary
Montreal Centre, R.A.S.C.
381 Prince Albert Avenue
Montreal.

Excerpts from
Revised Constitution and By-Laws of
The Royal Astronomical Society of Canada

BY-LAWS

I. Membership

The membership of the Society shall comprise three classes:

- (1) Members, including annual members and life members,
- (2) Student Members,
- (3) Honorary Members.

Student Members shall be limited to full-time students at any educational institution, and it shall be the duty of the officer enrolling them or renewing their membership to ensure that they are such, either through personal knowledge or by a letter from the educational institution involved.

II. Election of Members

(a) Election of Members and Student Members attached to Centres.

Persons desirous of being proposed for membership shall be recommended by at least two members of a Centre of the Society. The proposal and recommendation shall be read at a meeting of the Centre of which the candidate seeks membership in the Society, and the election may take place at that or any subsequent meeting thereof. To be elected, the candidate must receive at least two-thirds of the votes of the members present, whereupon he, or she, shall become a member of the Society and shall be attached to the Centre at which he or she, has been elected.

Every candidate elected to membership shall pay his fee in advance; if he is not elected his fee shall be refunded.

IV. Fees

The annual fee of a Member shall be five dollars.

The annual fee of a Student Member shall be three dollars.

The annual membership fee shall be payable between the first of October and the thirty-first of December in each year. Payment of such fee shall entitle the Member to membership for a year commencing on the first of October and shall entitle him to receive all publications issued for the ensuing calendar year. If the Member applies for election before the first of July the full fee shall be paid and he shall receive all publications issued subsequent to his application and also back numbers for that calendar year if applied for and if available; if the Member applies for election between the first of July and the first of October one-half of the annual fee shall be paid and the Member may receive upon request, if they are available, a copy of the Observer's Handbook for that year and such other publications as may be issued after the first of July in that year.

SEE JUNE 1957 ISSUE OF THE SOCIETY'S JOURNAL FOR THE
COMPLETE CONSTITUTION AND BY-LAWS.

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

NOTICE OF MEETING

The next meeting of the Centre will be held in the Macdonald Physics Building, McGill University, on Thursday, November 14, 1957, at 8:15 p.m.

Lecturer:- Dr. Peter M. Millman

Title of Lecture:- The World Looks at the Earth

Dr. Millman of the National Research Council, Ottawa, is directing the Auroral and Meteor Centres, I.G.Y. in which observations this Centre is participating.

His lecture will be explanatory of many phases of the activities and purposes of the International Geophysical Year, and of the part which Canada is taking.

ANNUAL MEMBERSHIP FEES:-

Membership fees are payable in advance of January 1, of each year. In order to avoid wastage, the National Council advises that publications will be sent only to those members in good standing at January 25.

Fees are now payable - \$5.00 per year, except in the case of students, for whom the fee is \$3.00.

Cheque or money order payable to the R.A.S.C. should be sent to the Treasurer:-

Mr. F. W. Baker
19 Brunet Avenue
Pointe Claire, Quebec

INCOME TAX DEDUCTIONS - DONATIONS:-

Donations made to the Society may be claimed as a deduction, authorized by a letter received from the Department of National Revenue of which the following is an extract:-

"You are informed that donations made to the Royal Astronomical Society of Canada, Montreal Centre, may be claimed as a deduction by the donors in computing their taxable income pursuant to the provision of Section 27(1)(a) of the Income Tax Act, if evidenced by a receipt."

It is pointed out that payment for membership or other fees are not deemed to be donations.

E. E. Bridgen, Secretary
Montreal Centre, R.A.S.C.
6156 Sherbrooke Street West
Montreal 28, Quebec

" ELEMENTARY ASTRONOMY "

A Series of Four Introductory Talks
Presented by

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

Among our newer members there are usually a number who wish to learn about the simpler aspects of astronomy. The following talks are designed to fill this need.

<u>Date</u>	<u>Subject</u>
Tues., Jan. 7th 1958	"From the Ground Up" - the basic overall picture and a little of the historical background.
Tues., Jan. 14th 1958	"The Solar System" - our system, its description, its behavior
Tues., Jan. 21st 1958	"Stars" - the night sky, the nearby stars.
Tues., Jan. 28th 1958	"More Stars" - the Milky Way, the universe

The talks will be given by W. T. T. Topham of the Montreal Centre and will commence at 8.30 p.m., lasting approximately an hour. A short discussion period will follow. The location is Room 2-G on the second floor of the Central Y.M.C.A. 1435 Drummond St.

The series is offered to members only, with a charge of \$1.00 to defray incidental expenses.

The Society's yearly membership fee is \$5.00, which is reduced to \$3.00 for full-time students at recognised schools and universities.

If you would like to attend these talks, please complete the form below and hand it in to the President, the Secretary or the Librarian.

.....

Royal Astronomical Society of Canada
Montreal Centre

I would like to attend the 1958 series of four elementary lectures for members of the Montreal Centre and enclose \$1.00 to cover incidental expenses.

Name

Address

.....

Date Telephone

ROYAL ASTRONOMICAL SOCIETY OF CANADA

Montreal Centre

NOTICE OF MEETING

<u>TIME</u>	<u>DAY</u>	<u>DATE</u>	<u>PLACE</u>
8:15 p.m.	Thursday	December 12, 1957	Macdonald Physics Building McGill University

LECTURER: DR. L. SEARLE

TITLE OF LECTURE: COSMIC EXPLOSIONS

Dr. L. Searle is at present on the staff of the David Dunlap Observatory.

ADVANCE NOTICE OF MEETING

The meeting of January 9, 1958, will be held in the Macdonald Physics Building, McGill University, and will be addressed by Dr. T. F. Morris, of the Department of Mathematics, McGill University, on the subject "Coments."

E. E. Bridgen
Secretary
Montreal Centre
R.A.S.C.

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

OBSERVATION COMMITTEE

DIRECTOR OF OBSERVATIONS F. J. DeKinder 10724 Emile Street
Montreal 12, Que.
Telephone: DU.8-0682

ASSISTANT DIRECTOR
OF OBSERVATIONS Miss Isabel K. Williamson 5162 Belmore Avenue
Montreal 29, Que.
Telephone: EL.1218

<u>Field of Observation</u>	<u>Committee Member in Charge</u>	<u>Telephone Number</u>
• Constellation Identification	E. E. Bridgen	DE.2012
• I.G.Y. Aurora Programme	Mrs. D. Zorgo	HU.8-3525
Solar Activity	F. J. DeKinder	DU.8-0682
Sun-spots (naked eye)	R. Venor	HU.9-1736
• I.G.Y. Meteor Programme	E. E. Bridgen S. M. Sundell Miss I.K. Williamson	DE.2012 RE.7-0246 EL.1218
• Nova Search	Mrs. M. I. Yane	HU.8-8333
• Lunar Observations	G. Wedge	RE.1-2148
• Lunar Meteor Search	Miss I. MacKenzie	HU.1-3738
• Eclipses	G. Gaherty, Jr. Miss I.K. Williamson	DE.2402 EL.1218
Variable Stars	F. P. Morgan	PO.6-6969
• Lunar Occultations	C. M. Good	DE.-0713
Comets	W.H. Birtles	PO.8-7126
• Planetary Observations	Dr. T. F. Morris	RE.7-2593
Satellite Tracking	C. M. Good	DE.0713
• Messier & Herschel Clubs	Miss I.K. Williamson	EL.1218
Migratory Birds	G. Harper Hall	CR.1-5159

Other Members of Observation Committee

M. Ferraris
D. Frappier
A. R. MacLennan
C. Papacosmas
~~G. Wedge~~ SEE 'LUNAR OBSERVATIONS'

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

NOTICE OF MEETING

<u>TIME</u>	<u>DAY</u>	<u>DATE</u>	<u>PLACE</u>
8:15 p.m.	Thursday	January 9, 1958	Macdonald Physics Building McGill University

Lecturer: Dr. T. F. Morris

Title of Lecture: Comets

Dr. Morris is a member of the staff of the Department of Mathematics, McGill University, and is also Vice-President of the Centre.

ADVANCE NOTICE OF MEETING

The Townsend Memorial Lecture is to be given on February 13th, 1958, by Dr. Fred L. Whipple, Director of the Smithsonian Institution Astrophysical Observatory, Cambridge, Mass.

He will lecture upon "Satellite Tracking".

ANNUAL MEMBERSHIP FEES

Fees for year 1958 are now payable, \$5.00 - except students for whom the fee is \$3.00 - and may be sent to the Treasurer:

Mr. F. W. Baker
19 Brunet Avenue
Pointe Claire
Montreal 33, Quebec

National Council advises that publications will be sent only to members in good standing at January 25th.

E. E. Bridgen
Secretary
Montreal Centre
R.A.S.C.

ROYAL ASTRONOMICAL SOCIETY OF CANADA

252 COLLEGE STREET, TORONTO 2B

By invitation of the Hamilton Centre
THE ANNUAL BUSINESS MEETING AND AT-HOME
will be held Friday, March 28th, 1958, 8.15 p.m.

MILLS MEMORIAL LIBRARY THEATRE
McMaster University, Hamilton

AGENDA:—Reports of Officers and Committees
Results of Balloting for Officers for 1958

ADDRESS OF THE PRESIDENT—HELEN S. HOGG, Ph.D., F.R.S.C.

GLOBULAR STAR CLUSTERS

Refreshments by courtesy of the Hamilton Centre.

Members and their friends are cordially invited.

Please accept the above as notice of the meeting and invitation to the At-Home. Please detach the ballot for **immediate return** in enclosed reply envelope.

E. J. A. KENNEDY, *National Secretary.*

Detach this slip and return it in your ballot envelope if you plan to attend the Annual Meeting and At-Home in Hamilton. A map of the McMaster Campus and further information will be sent to those returning this slip by March 20th.

Name..... Number of guests.....

Address

.....

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

Information for Members

Composition of the National Council

The National Council of the Society consists of the officers and the three elective members chosen by the accompanying ballot, and, in addition, two representatives appointed by each Centre, one of whom is the President of the Centre. The names of these appointed members of Council are as follows:-

Centre Francais de Montreal: Jean Asselin (Pres.), J. R. Grignon;
Edmonton: Earl Milton (Pres.), E. S. Keeping;
Halifax: L. Carrigan (Pres.), Rev. M. W. Burke-Gaffney S. J.;
Hamilton: Rev. N. Green (Pres.), H. B. Fox;
London: W. Wehlau (Pres.), W. G. Graham;
Montreal: A. R. MacLennan (Pres.), G. Harper Hall;
Ottawa: J. E. Lilley (Pres.), J. L. Locke;
Quebec: J. Alfred Dumont (Pres.), Paul H. Nadeau;
Toronto: G. A. Cooper (Pres.), Mrs. K. M. Heaton;
Vancouver: R. J. Clark (Pres.), Dr. G. M. Shrum;
Victoria: N. G. Rogers (Pres.), R. S. Evans;
Windsor: E. W. Keith (Pres.)
Winnipeg: J. Scatliffe (Pres.), R. J. Lockhart.

Biographical Notes on Candidates for the National Council

The five members of the Society whose names appear on the ballot for election of three to the Council are well known for their work in the Society over many years.

Miriam S. Burland, B.A. Miss Burland is an astrophysicist at the Dominion Observatory, Ottawa. She has held many offices in the Ottawa Centre, including those of Secretary and President.

✓ A. Vibert Douglas, M.Sc., Ph.D. Miss Douglas is Dean of Women at Queen's University, Kingston, and also lectures in astronomy there. She is a past President of the National Society.

✓ E. H. Gowan, B.A., B.Sc. Mr. Gowan is Associate Professor of Physics at the University of Alberta, Edmonton. He is Secretary of the Edmonton Centre.

× W. J. McCallion, M.A. Mr. McCallion, a mathematician, is Director of University Extension at McMaster University, Hamilton. He is a past President of the Hamilton Centre.

Carl Reinhardt, B.Sc. Mr. Reinhardt is a mining engineer and geologist of Cobalt and of Toronto. He is a member of the National Council's property committee, accepting much of the responsibility for the maintenance and operation of 252 College Street.

Office of Secretary Mr. E. J. A. Kennedy, Secretary for twenty-one years, has resigned and has been appointed Honorary Secretary by the Council. Mr. J. E. Kennedy (no relation), a research physicist at Defence Research Medical Laboratories, Toronto, is the new candidate for Secretary. He is a graduate of Queen's University and was formerly Professor of Physics at the University of New Brunswick.

Honorary Members The following eminent astronomers were elected by the Council on January 15th, 1958, as Honorary Members:

S. A. Mitchell, Ph.D., Director Emeritus of Leander McCormick Observatory, Virginia

Joel Stebbins, Ph.D., Director Emeritus of Washburn Observatory, Wisconsin, now of Lick Observatory, California.

March 5, 1958

Montreal Centre

The Montreal Centre is conducting a survey to find out what astronomical equipment is owned by the members. There are several reasons why we would like to have this information on file. In the first place we are genuinely interested in knowing how much observational work our members are doing, either through organized programmes or entirely on their own. Then too, there are possibly members who would like to participate in our programmes but who are not at present doing so. ~~When some unusual phenomena occurs~~

~~When~~ Also, it would be nice for us to know where we find additional observers and instruments when planning extended programmes for unusual phenomena such as eclipses. We would appreciate it if you would send in the form below as soon as possible. If complete and you have no instrument please send the form in anyway.

Do you own:
A telescope Yes No
Binoculars Yes

Do you own a telescope? Yes...No... YES..NO...
~~Do you own a pair of~~ binoculars or field glasses? What power?
~~Do you own a~~ short wave radio? Yes...No...
~~Do you own a~~ stop watch? Yes...No...

If you own a telescope, please give the following information.
Type of instrument (refractor or reflector)
Diameter of objective (millimetres or inches)
Is it portable? YES...NO...
Type of mounting (altazimuth or equatorial)
How many eyepieces?(give power).....

Any special accessories such as clock drive, setting circles, slow motions etc. *See diagram page*

Do you use your instrument frequently? Occasionally? Very seldom?
If you are not presently engaged in any of our programmes, would you like to ~~do so~~ *do so*?
Yes..... No.....

Name Address Phone number Date

Royal Astronomical Society of Canada
Montreal Centre

DIRECTOR OF OBSERVATIONS

Frank J. DeKinder

10724 Emile Street, Montreal 12, Que.
Telephone: DU.8-0682

ASSISTANT DIRECTOR OF OBSERVATIONS

Miss Isabel K. Williamson

5162 Belmore Avenue, Montreal 29, Que.
Telephone: EL.1218

OBSERVATION COMMITTEE

<u>Field of Observation</u>	<u>Committee Member in Charge</u>	<u>Telephone Number</u>
Constellation Talks	E. E. Bridgen	DE.2012
Aurora Borealis	Mrs. D. Zorgo	HU.8-3525
Sun-spots (naked-eye)	R. Venor	HU.9-1736
Meteor Showers	Miss I.K.Williamson	EL.1218
Sporadic Meteors	E. E. Bridgen	DE.2012
Nova Search	W. H. Birtles	TR.7126
Messier Club	Miss I.K.Williamson	EL.1218
Lunar Observations	Miss M. MacKenzie	HU.1-3738
Planetary Observations	Miss R. Jamieson	WI.9285
Variable Stars	F. P. Morgan	PO.6-6969
Comets	W. H. Birtles	TR.7126
Sun-spots (telescopic)	F. DeKinder	DU.8-0682
Lunar Occultations	C. M. Good	DE.0713
Eclipses	Miss I.K.Williamson	EL.1218
Migratory Birds	G. Harper Hall	DO.5159
Telescope Making	R. Venor	HU.9-1736
Maintenance of Telescopic and Optical Equipment	D. Frappier Dr. T. F. Morris	HU.9-2363 RE.7-2593

ROYAL ASTRONOMICAL SOCIETY OF CANADA

Montreal Centre

Telescope Survey

Report to Director of Observations:

The following table shows the results of the 31 reports received to date (April 19, 1958).

Name	Binoculars	Stop Watch	Short-Wave	Telescope
K.R.Brasch	Yes	Yes	Yes	3" Refractor
E.E.Bridgen	12 x 32			
A.Brodsky	Yes	Yes		4" Refractor
G.A.Bye				
E.Charters	Yes			Donated to Society
M.Choquette				6" Reflector
F.J.DeKinder	Yes	Yes	Yes	4½" Refractor
E.I.Fraser	8 x			
G.Gaherty	7 x 50		Yes	4½" Reflector
W.H.Gilbert	20 x 60			3" Refractor
R.Goudreau				6" Reflector
H.F.Hall	Yes	Yes		
R.S.Jacobs	20 x 65	Yes	Yes	
R.A.Javitch	Yes	Yes	Yes	
W.G.Jeffery	8 x		Yes	2½" Refractor
A.Kurtz	Yes	Yes		
I.A.Laur	Yes		Yes	3" Refractor
H.E.Lehmann	Yes	Yes		6" Reflector
F.Lunn	Yes	Yes		4½" Reflector
D.P.McLean	Yes			
A.R.MacLennan	Yes			3" Refractor
E.C.Martin				
M.deMaurivez	Yes			
F.P.Morgan	Yes			6" Reflector
E.Morosan				
R.Prezament	Yes			
D.Sands	4 x 40			4" Reflector
S.M.Sundell	Yes			6" Reflector
F.Vickerson	Yes			6" Reflector
G.Wedge		Yes		2½" Refractor
V.Williams	Yes			3" Reflector
TOTAL	31	25	10	7
				18

Geoffrey Gaherty, Jr.,
636, Sydenham Avenue,
Montreal 6, Quebec.
April 19, 1958.

Royal Astronomical Society of Canada

Montreal Centre

Telescope Survey

Report to Director of Observations:

The following table shows the results of the 31 reports received to date (April 17, 1958):

Name	Binoculars	Stop Watch	Short-Wave	Telescope
K. R. Brasch	Yes	Yes	Yes	3" Refractor
E. E. Bridgen	12 x 32			
A. Brodsky	Yes	Yes		4" Refractor
G. A. Bye				
R. Charters				

ROYAL ASTRONOMICAL SOCIETY OF CANADA

Montreal Centre

Telescope Survey

Report to Director of Observations:

The following table shows the results of the 81 reports received to date (May 3, 1958):

Name	Binoculars	Stop Watch	Short-Wave	Telescopes
D.R.Anstice	Yes			3" Refractor
M.Beardsley	Yes	Yes	Yes	10" Refractor
K.R.Brasch	Yes	Yes	Yes	3" Refractor
E.E.Bridgen	12 x 32			
A.Bredsky	Yes	Yes		4" Refractor
G.A.Bye				
E.Charters	Yes			Donated to Society
M.Choquette				6" Reflector
W.J.Cullinan				1" Refractor
D.Davies				
F.J.DeKinder	Yes	Yes	Yes	4½" Refractor
C.L.Drolet	7 x 35			
E.I.Fraser	8 x			
G.Gaherty	7 x 50		Yes	4½" Reflector
W.H.Gilbert	20 x 60			3" Refractor
R.Geudreau				6" Reflector
H.F.Hall	Yes	Yes		
M.Hume				
R.S.Jacobs	20 x 65	Yes	Yes	
R.A.Javitch	Yes	Yes	Yes	
W.G.Jeffery	8 x		Yes	2½" Refractor
A.Kurtz	Yes	Yes		
I.A.Laur	Yes		Yes	3" Refractor
H.E.Lehmann	Yes	Yes		6" Reflector
F.Lunn	6 x 30	Yes	Yes	4½" Reflector
D.P.McLean	Yes			
A.R.MacLennan	Yes			3" Refractor
E.C.Martin				
M.deMaurivez	Yes			
F.P.Morgan	Yes			6" Reflector
E.Morosan				
F.R.Pattison	7 x 50	Yes		8" Reflector
R.Prezament	Yes			
M.R.Pyne	10 x 50	Yes		6" Reflector
D.Sands	4 x 40			4" Reflector
F.A.Stephen	Yes	Yes	Yes	
S.M. Sundell	Yes			6" Reflector
R.C.Surtees	Yes			2½" Refractor
W.T.T.Topham			Yes	6" Reflector
F.Vickerson	Yes			6" Reflector
W.A.Warren	Yes			6" Reflector
G.Wedge		Yes		2½" Refractor
V.Williams	Yes			3" Reflector

Telescope Survey, Report to Director of Observations, May 3, 1958, page 2.

Name	Binoculars	Stop Watch	Short-Wave	Telescope
R.Yeoman				3½" Reflector
TOTAL	44	33	14	11 27

Geoffrey Gaherty, Jr.,
636, Sydenham Avenue,
Montreal 6, Quebec.
May 3, 1958.

ROYAL ASTRONOMICAL SOCIETY OF CANADA

Montreal Centre

Telescope Survey

Report to Director of Observations:

The following table shows the results of the 57 reports received to date (May 17, 1958):

Name	Binoculars	Stop Watch	Short-Wave	Telescope
D.R.Anstice	Yes			3" Refractor
M.Beardsley	Yes	Yes	Yes	10" Refractor
B.Bisson				
K.R.Brasch	Yes	Yes	Yes	3" Refractor
E.E.Bridgen	12 x 32			
A.Brodsky	Yes	Yes		4" Refractor
G.A.Bye				
E.Charters	Yes			Donated to Society
M.Choquette				6" Reflector
R.O.Clermont				
W.J.Cullinan				2" Refractor
D.Davies				
F.J.DeKinder	Yes	Yes	Yes	4½" Refractor
D.E.Douglas	Yes		Yes	
C.L.Drolet	7 x 35			
G.Emond	8 x 30			4½" Refractor 3" Refractor 2½" Refractor 2" Refractor 4" Refractor
P.H.Finkel	Yes	Yes		3" Refractor
D.Frappier	Yes	Yes		3" Refractor
E.I.Fraser	8 x			
G.Gaherty	7 x 50		Yes	4½" Reflector 2" Refractor
G.Gibbs	Yes		Yes	4½" Reflector
W.H.Gilbert	20 x 60			3" Refractor 6" Reflector
R.Goudreau				
H.F.Hall	Yes	Yes		
M.Hume				
M.Ihnat				
R.S.Jacobs	20 x 65	Yes	Yes	
R.A.Javitch	Yes	Yes	Yes	
W.G.Jeffery	8 x		Yes	2½" Refractor
B.Kortekaas	Yes		Yes	3½" Reflector 2" Refractor
A.Kuntz	Yes	Yes		
W.Larson	Yes		Yes	
I.A.Laur	Yes		Yes	3" Refractor
H.E. Lehmann	Yes	Yes		6" Reflector

more

Telescope Survey, Report to Director of Observations, May 17, 1958, page 2.

Name	Binoculars	Stop Watch	Short-Wave	Telescope
F.Lunn	6 x 30	Yes	Yes	4 $\frac{1}{2}$ " Reflector 3" Refractor
J.T.McCay	7 x 50			3" Refractor
D.P.McLean	Yes			
A.R.MacLennan	Yes			2 $\frac{1}{2}$ " Refractor
E.C.Martin				
M.deMaurivez	Yes			
F.P.Morgan	Yes			6" Reflector
E.Morosan				
C.A.Odell				
F.R.Pattison	7 x 50	Yes		8" Reflector
R.Prezament	Yes			
M.R.Pyne	10 x 50	Yes		6" Reflector
D.Sands	4 x 40			4" Reflector
F.A.Stephen	Yes	Yes	Yes	
S.M. Sundell	Yes			6" Reflector
R.C.Surtees	Yes			2 $\frac{1}{2}$ " Refractor
W.T.T.Topham			Yes	5 $\frac{1}{2}$ " Reflector
F.Vickerson	Yes			6" Reflector
W.A.Warren	Yes			6" Reflector
G.Wedge		Yes		2 $\frac{1}{2}$ " Refractor
V.Williams	Yes			3" Reflector
R.Yeoman				3 $\frac{1}{2}$ " Reflector
K.Zorgo	Yes			5" Reflector
TOTAL	57	42	16	15
				40

There is a surprising number of the Montreal Centre's regular observers who have not yet handed in their reports. There are 9 members of the Observation Committee who have not yet done so, for example. Most of the members who expressed a desire to take part in our programmes have been contacted by members of the Observation Committee. Many of these are now participating in the Centre's activities.

Geoffrey Gaherty, Jr.,
636, Sydenham Avenue,
Montreal 6, Quebec,
May 17, 1958.

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

NOTICE OF MEETING

<u>Time</u>	<u>Day</u>	<u>Date</u>	<u>Place</u>
8:15 p.m.	Thursday	March 13, 1958	Macdonald Physics Building McGill University

LECTURER: DR. DORRIT HOFFLEIT

SUBJECT: NANTUCKET AND THE MILKY WAY.

Dr. Hoffleit is Director of the Maria Mitchell Observatory, Nantucket, Mass., also Research Associate of Yale University.

Next Meeting. April 10, 1958. Speaker and subject to be
announced.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

Montreal Centre

N O T I C E O F M E E T I N G

<u>Time</u>	<u>Day</u>	<u>Date</u>	<u>Place</u>
8:15 p.m.	Thursday	April 10, 1958	The Macdonald Physics Building McGill University

LECTURER: E. R. Pounder, Ph.D.

SUBJECT: "Rockets and Space Flight"

Dr. Pounder is Associate Professor, Department of Physics, McGill University.

This meeting is open, free of charge, to all members of the public.

ADVANCE NOTICE OF MEETING

May 8, 1958. This meeting will be the closing meeting of the season. A film entitled "The Strange Case of the Cosmic Rays" will be shown.

E. E. Bridgen
Secretary
Montreal Centre
6156 Sherbrooke Street West, Apt. 10
Montreal 28, Quebec

Royal Astronomical Society of Canada
Montreal Centre

The Montreal Centre is conducting a survey to find out what astronomical equipment is owned by its members. There are several reasons why we are making this survey.

In the first place, we are genuinely interested in knowing how much observational work our members are doing, either through organized programmes or entirely on their own. Then too, there are possibly members who would like to participate in our programmes but are not at present doing so. Also, it would be very helpful to have information on file so that we would know where to find additional observers and equipment when planning extensive observations for unusual phenomena such as eclipses.

We would appreciate it if you would complete and send in the form below as soon as possible. If you have no equipment, please send in the form anyway.

.....

Do you own

A telescope? Binoculars or fieldglasses?

A stop watch? A short-wave radio?

If you own a telescope, please give the following information:

Type of instrument (refractor or reflector)

Diameter of objective (inches or mm.)

Type of Mounting (altazimuth or equatorial)

Eyeieces (give powers)

Special accessories (setting circles, slow motion drive, etc.)

.....

Do you use your instrument

Frequently? Occasionally? Very seldom?

If you are not presently engaged in any of our programmes, would you like to

do so?

Your name

Address

.....

Phone Number Date

Please mail completed form to the Director of Observations
F. J. DeKinder, 10724 Emile St., Montreal 12, Que.
or hand it in at the Observatory any Saturday evening.

← FL
SOR

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

N O T I C E O F M E E T I N G

<u>Time</u>	<u>Day</u>	<u>Date</u>	<u>Place</u>
8:15 p.m.	Thursday	May 8, 1958	The Macdonald Physics Building McGill University

By courtesy of the Bell Telephone Company of Canada, a film will be shown entitled:

THE STRANGE CASE OF THE COSMIC RAYS

Cosmic rays and their possible effect have been much to the fore in the consideration of space travel.

This meeting will be the last of the 1957-58 session, and after the showing of the film, will become a social gathering, with the serving of refreshments.

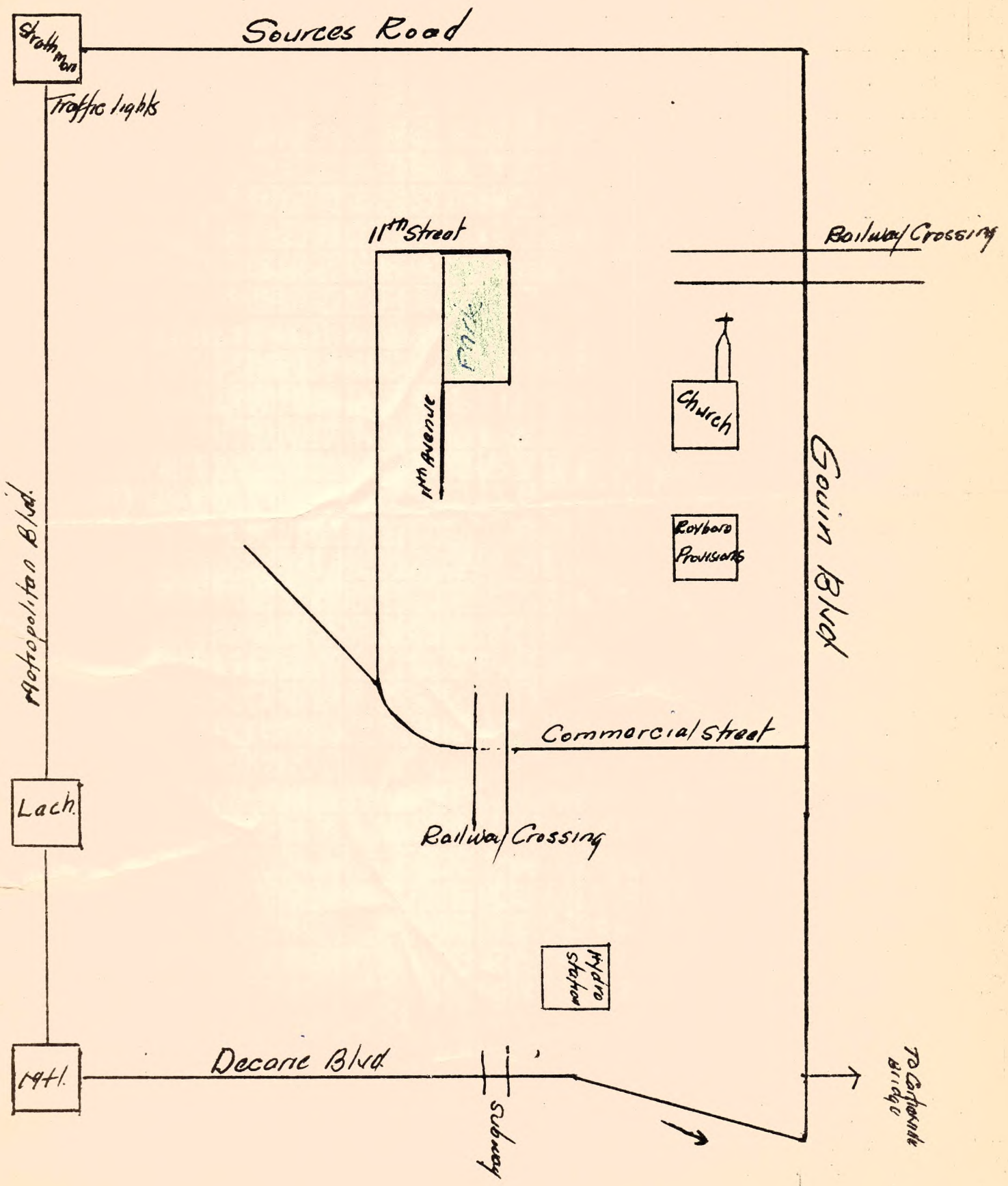
All members and their friends are cordially invited.

The meeting is open free of charge to all members of the public.

With those members who wish to help with the refreshments please telephone Mrs. Zorgo, Hu. 8-3525.

Edwin E. Bridgen, Secretary
Montreal Centre, R.A.S.C.

6156 Sherbrooke St. W., Apt. 10
Montreal 28, Quebec



ROYAL ASTRONOMICAL SOCIETY OF CANADA

Montreal Centre

Telescope Survey

Report to Director of Observations:

The following table shows the results of the 62 reports received to date (September 27, 1958):

Name	Binoculars	Stop Watch	Short-Wave	Telescope	
J.R.Aird	Yes			2½" Refr.	
D.R.Anstice	Yes			3 " Refr.	
M.Beardsley	Yes	Yes	Yes	10 " Refr.	
B.Bisson					
K.R.Brasch	Yes	Yes	Yes	3 " Refr.	
E.E.Bridgen	12x32				
A.Brodsky	Yes	Yes		4 " Refr.	
G.A.Bye					
E.Charters	Yes				
M.Choquette				6 " Refl.	
R.O.Clermont					
W.J.Cullinan				2 " Refr.	
D.Davies					
F.J.DeKinder	Yes	Yes	Yes	4½" Refr.	
D.E.Douglas	Yes		Yes		
C.L.Drolet	7x35				
G.Emond	8x30			4½" Refr.	
				3 " Refr.	
				2½" Refr.	
				2 " Refr.	
P.H.Finkel	Yes	Yes			(Brodsky)
D.Frappier	Yes	Yes		3 " Refr.	
E.I.Fraser	8x			2½" Refr.	
G.Gaherty	7x50	Yes	Yes	4½" Refl.	
				2 " Refr.	
G.Gibbs	Yes		Yes	4½" Refl.	
W.H.Gilbert	20x60			3 " Refr.	
C.M.Good	Yes	Yes	Yes	4 " Refr.	
R.Goudreau					(Choquette)
M.Greenspon	Yes			6 " Refl.	
H.F.Hall	Yes	Yes			
M.Hume					
M.Ihnat					
R.S.Jacobs	20x65	Yes	Yes		
R.A.Javitch	Yes	Yes	Yes		
W.G.Jeffery	8x		Yes	2½" Refr.	
B.Kortekaas	Yes		Yes	3½" Refl.	
				2 " Refr.	
A.Kurtz	Yes	Yes			

more

Telescope Survey, Report to Director of Observations, September 27, 1958, page 2.

Name	Binoculars	Stop Watch	Short-Wave	Telescope
W.Larson	Yes		Yes	
I.A.Laur	Yes		Yes	3 " Refr.
H.E.Lehmann	Yes	Yes		6 " Refl.
F.Lunn	6x30	Yes	Yes	4½" Refl. 3 " Refr.
J.T.McCay	7x50			3 " Refr.
D.P.McLean	Yes			
A.R.MacLennan	Yes			2½" Refr.
E.C.Martin				
M.deMaurivez	Yes			
F.P.Morgan	Yes			6 " Refl.
E.Morosan				
G.B.Noxon	Yes			
C.A.Odell				
F.R.Pattison	7x50	Yes		8 " Refl.
R.Prezament	Yes			
M.R.Pyne	10x50	Yes		6 " Refl.
D.Sands	4x40		Yes	4 " Refl.
F.A.Stephen	Yes	Yes	Yes	
S.M.Sundell	Yes			6 " Refl.
R.C.Surtees	Yes			2½" Refr.
W.T.T.Topham			Yes	5½" Refl.
F.Vickerson	Yes			6 " Refl.
W.A.Warren	Yes			6 " Refl.
G.Wedge		Yes		2½" Refr. (C)
V.Williams	Yes			6 " Refl. (C)
				3 " Refl.
I.K.Williamson	7x50	Yes	Yes	3½" Refr. (C)
R.Yeoman				3½" Refl.
K.Zorgo	Yes			5 " Refl.
TOTAL	62	47	19	44

Note: A name in brackets following a listing indicates that the person shares the telescope with another member and that the telescope is listed under that person's name. (C) indicates that the telescope is on loan from the Centre.

Summary: More than one quarter of the Montreal Centress members have responded to the telescope survey. From their replies the following statistics have been gleaned:

76 % have binoculars or field glasses
 31 % have stop watches
 29 % have short-wave radios
 71 % have telescopes
 of which
 57 % are refractors and
 19 43 % are reflectors.

more

Telescope Survey, Report to Director of Observations, September 27, 1958, page 3.

The telescopes range in aperture from 2- to 10-inches; the 3-inch refractors and 6-inch reflectors being tied at 21 % apiece as the most popular telescopes.

Geoffrey Gaherty, Jr.,
636, Sydenham Avenue,
Montreal 6, Quebec.

Mean aperture = 4.1 inches

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

Report of Observation of Meteor?

Observer: *Geoffrey Robert, Jr* Date: *APR. 5/6, 1960*
Location of Observer: *636, Lydenham Avenue, Montreal 6* Time: *21:58:56.5 EST.*
State of Sky: *Hazy with light clouds*
Magnitude: *-4 (Bonaventura) ⁵⁰ certainly high* Colour: *Definitely Green*
Location in Sky: *From ⁵⁰North of direction towards horizon (end of track obscured)*
Direction of Movement: *Eastward ^{downward} toward horizon* *Moving rather fast.*
Length of time visible: *1-2 secs (moving rather fast)* Trail: *None*
Sounds - Time interval between sight and sound: *Too much noise from city.*
Other information: *Timed with stopwatch & WWV (while watching for Sputnik III)*
Observed as it dipped behind ^{neighbour's} house near ~~Comore~~ ~~Boulevard~~ ~~St. Louis~~ ~~St. Louis~~
object Do not record anything of which you are not sure.
Diagram or sketch may be made on reverse side. *ALT. ~ 25°*
AZM. ~ 50° N of E

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

NOVA SEARCH REPORT

Observer Area No.
 Address Month JUNE 19 62
 Time Used U.T.
 Telephone No. Power of Binoculars

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
HERCULES	3 →			6			5	6					4			
Time																
Mag.	6 →			6			6	6					6			

Date	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
												WAR				
Time	4									4	3	2				
Mag.	6									6	6	6				

In recording time of observation, please use 24-hour system, with 0 hours at midnight, and indicate whether Eastern Standard or Daylight Time.

This report form is to be used for negative reports only. Please mail report to the chairman promptly at the end of each month. If you note anything unusual in your area, PLEASE PHONE CHAIRMAN IMMEDIATELY.

Chairman, Nova Search Section
Observation Committee, Montreal Centre

(Mrs. M. I.) Dorothy Yane
5375 Cumberland Avenue,
Montreal 29, Que.

Telephone: HU.8-8333

ROYAL ASTRONOMICAL SOCIETY OF CANADA
 Montreal Centre

NOVA SEARCH REPORT

Observer Area No.
 Address Month JULY 19 60
 Time Used U.T.
 Telephone No. Power of Binoculars

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
HERC Time		4	3	4						3					6	
AND															6	
HERC Mag.		6	6	6						6					6	
AND															6	

Date	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
HERC Time							3									
AND							3									
HERC Mag.							6									
AND							6									

In recording time of observation, please use 24-hour system, with 0 hours at midnight, and indicate whether Eastern Standard or Daylight Time.

This report form is to be used for negative reports only. Please mail report to the chairman promptly at the end of each month. If you note anything unusual in your area, PLEASE PHONE CHAIRMAN IMMEDIATELY.

Chairman, Nova Search Section
 Observation Committee, Montreal Centre

(Mrs. M. I.) Dorothy Yane
 5375 Cumberland Avenue,
 Montreal 29, Que.

Telephone: HU.8-8333

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

NOVA SEARCH REPORT

Observer Area No.
 Address Month ~~SEPT~~ ^{AUG} ~~1960~~ ¹⁹⁶⁰

..... Time Used ^{E.P.T.}

Telephone No. Power of Binoculars

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
H Time A	3								3					6		
H Mag. A	6								6					6		
	6								-					6		

Date	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
Time																
Mag.																

In recording time of observation, please use 24-hour system, with 0 hours at midnight, and indicate whether Eastern Standard or Daylight Time.

This report form is to be used for negative reports only. Please mail report to the chairman promptly at the end of each month. If you note anything unusual in your area, PLEASE PHONE CHAIRMAN IMMEDIATELY.

Chairman, Nova Search Section
Observation Committee, Montreal Centre

(Mrs. M. I.) Dorothy Yane
5375 Cumberland Avenue,
Montreal 29, Que.

Telephone: HU.8-8333

ROYAL ASTRONOMICAL SOCIETY OF CANADA

Montreal Centre

July 31, 1958.

Y. M. H. A. URBAN CAMP

Suggested Programme

10:30-11:30 A.M.

- | | | |
|-------------------|----------------------|--|
| Monday | August 18 | General picture with demonstration of Solar System on orrery. DRAWINGS OF CONSTELLATIONS. STAR CHARTS BEGUN |
| Tuesday | August 19 | More detailed description of Solar System illustrated with photographs. |
| Wednesday | August 20 | Description of Sun and observations of Sunspots with 3-inch refractor telescope. |
| Thursday | August 21 | Demonstration of constellations with Planetarium. |
| Friday | August 22 | Star Night. 8:30-10:30 P.M. |

The lectures are to be given by Geoffrey Gaherty, Jr. with the assistance of Constantine Papacosmas and Klaus Brasch. On the Star Night it is proposed to have several telescopes in operation, and it is suggested to limit those attending to only those who have taken part in the above course. This will enable them to obtain more than just a brief glance through the eyepiece. The objects on view will include the Moon, which will be well placed on the 22nd, the planet Saturn, and several other objects, probably the double star Albireo, the Great Cluster in Hercules, and another yet to be chosen.

Geoffrey Gaherty, Jr.,
636, Sydenham Avenue,
Montreal 6, Quebec.

Tel.: DE. 2402.

Y. M. H. A. Urban Camp
5500 Weatherly Ave.

July 28 - Aug 22.

Monday to Friday 10.00am to 4.00pm.

Mr. Freed Re. 7-6551 local 52.

2 to 4 talks, finishing up with a star night.

Geoffrey Gaherty

Constantine Papacomas REB-6902

Klaus Brasch. CR6-4238

Facilities Materials Afternoon

Age. Number

Indoors or outdoors 13-15 Boys girls 70 children

2:00 Thursday

Rm 38

~~Wed.~~ 10.30-11.30

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

presents its

TWELFTH ANNUAL STAR NIGHT

Thursday, September 18, 1958

8.00 p.m.

WESTMOUNT PARK
(Corner Western and Melville Avenues)

MASTER OF CEREMONIES: Alex. R. MacLennan
President, Montreal Centre, R.A.S.C.

OBSERVATION PROGRAMME:

Six different types of celestial objects have been selected for observation - a satellite, a planet, a double star, an open star cluster, a globular cluster and an external galaxy.

The public is invited to view these objects through telescopes owned and operated by members of the Montreal Centre. (See reverse side of programme for brief notes on objects chosen.)

ILLUSTRATED TALK: "The Planet Saturn"
Frank J. DeKinder
Director of Observations, Montreal Centre

MOVING PICTURES: "A" is for "Atom" - Courtesy Canadian General Electric
"The Solar Family"
Projector & Projectionist courtesy Province of
Quebec Cinephotography Service.

QUESTION & ANSWER PERIOD: Conducted by Dr. Henry F. Hall, Principal,
Sir George Williams College

The audience will be given the opportunity of handing in written questions which will be answered from the platform.

NO ADMISSION CHARGE

The thanks of the Society are extended to the City of Westmount for its help and encouragement in planning this event.

Membership in the Montreal Centre of the Royal Astronomical Society of Canada is open to anyone 16 years of age or older who is interested in astronomy. Information and application forms can be obtained at the programme table under the green light.

OBSERVATION PROGRAMME

" A Trip Through Space "

FIRST STOP - THE MOON!

With all the interest in artificial satellites and space travel, the Moon has come in for a lot of attention these days. Revolving about the Earth at a distance of 238,000 miles, it is a satellite to be proud of, for in relation to its primary the Moon is the largest satellite in the solar system, with a diameter of 2,160 miles and a mass 1/80 that of the Earth. The Moon has no light of its own but simply reflects the sunlight that falls upon it. It is a fine object for small telescopes.

ON TO THE PLANETS

The nine planets that revolve about the Sun also shine by reflected sunlight. The planet best placed for observation right now is the planet Saturn. With its beautiful system of rings, Saturn is the showpiece of the solar system. Its distance from the Sun is 886 million miles. It has nine satellites, the largest of which - Titan - can be seen with a small telescope.

TO THE STARS BEYOND

A star is a huge mass of glowing gases. Our Sun is a star, the nearest star to us. All other stars are so far off that even through telescopes they appear as pinpoints of light. A new unit of length, the light year (the distance that light travels in a year at a speed of 186,000 miles a second) is needed to measure their distances. The telescope reveals that many stars are actually double stars revolving about a common centre of gravity. Albireo, a double star in the constellation of Cygnus, is 410 light years away. One star of the pair is yellow and the smaller component is blue.

TO MORE DISTANT STAR CLUSTERS

The stars form pleasing patterns in the sky which man has divided into groups called constellations. There are closer aggregations of stars called clusters. The most familiar is the group known as the Pleiades which is visible to the unaided eye. Binoculars and small telescopes reveal many such clusters. One of the loveliest is the Double Cluster in the constellation of Perseus. At a distance of 4300 light years, it appears "like a scattering of gold dust" in a low power telescope.

TO THE LIMITS OF OUR GALAXY

On the outskirts of our galaxy are about a hundred huge spherical aggregations of stars, so compact towards the centre that even with a telescope it is difficult, if not impossible, to distinguish individual stars. These are known as "globular clusters". The finest globular cluster in the northern sky is M13, the Hercules cluster, at a distance of 34,000 light years. It contains not less than 100,000 stars, with each star on the average about one light year from the next.

BEYOND THE MILKY WAY

In our galactic system, the Milky Way, are billions of stars, some like the Sun, some thousands of times larger, some smaller. Far beyond our own galaxy are hundreds of thousands of other stellar systems. One of the nearest is the Great Nebula in Andromeda, a spiral galaxy about 1,600,000 light years away. It can be seen as a light fuzzy patch, the only object beyond our galaxy that is visible to the naked eye. Photographs taken with the giant telescopes resolve it into stars.

TWELFTH ANNUAL STAR NIGHT
 ROYAL ASTRONOMICAL SOCIETY OF CANADA
 Montreal Centre

Special Instructions to Telescope Operators

DATE: Thursday, September 18, 1958
 TIME: All operators are asked to be on the grounds by 7.00 p.m.
 PLACE: Westmount Park, corner Melville and Western avenues, just in front
 of the bandstand.

You will be operating a 4" REFLECTOR owned by G GAHERTY, JR.

Your partner will be DAVID SANDS

Small areas will be roped off for the telescopes. Please set your instrument up in
 Section No. 1

Each telescope is to be trained on one of the six objects selected for observation.
 You are asked to keep your telescope trained on ALBIREO

Observations will continue uninterrupted during the various talks over the loud-
 speaker. Please put your telescope into operation as soon as you are ready. (Observe
 the Moon if the sky is still too bright for your allotted object.) We suggest that
 the operators work as a team, one actually operating the telescope while the other
 keeps up a running commentary on the object under observation. The endless repeti-
 tion will become monotonous to you but remember that you will be talking to an
 ever-changing group of people. Undoubtedly you will be asked numerous questions.
 If there are any that you cannot answer, suggest that they be handed in at the
 Green Light for the Question and Answer Period.

For your own comfort we recommend that you wear heavy shoes for the ground gets
 very damp and cold. A box or step for the smaller visitors to stand on would be
 handy. During the evening hot coffee will be served on the bandstand to all the
 telescope operators and other committee members. Naturally, this will be done as
 quietly and unobtrusively as possible for the general public cannot be included
 in this invitation. You will be told when the coffee is ready, and you and your
 partner can visit the bandstand in turn.

Try to keep the spectators at your telescope in a queue. If you have any difficulty,
 signal to the platform for help. (All operators are asked to bring a flashlight,
 covered with red tissue paper, to be used for this purpose.) Under no circumstances
should you leave your telescope unattended.

Please follow these instructions carefully. This is a big undertaking and it is
 only by full co-operation that we can be assured of success.

Star Night will be held "rain or shine".
 So please be on hand regardless of what
 you personally think of the weather.

STAR NIGHT CHAIRMEN
 C. M. Good
 I. K. Williamson

DE.0713
 EL.1218

ROYAL ASTRONOMICAL SOCIETY OF CANADA

MONTREAL CENTRE

NOTICE OF ANNUAL MEETING

The 40th Annual General Meeting of the Montreal Centre, Royal Astronomical Society of Canada, will be held at 8:15 p.m. on Thursday, October 16, 1958, in Room 102 of the Macdonald Physics Building, McGill University.

Reports of Officers will be presented, after which members will elect the Officers and Council for the year 1958-59.

The Council submits the following list of nominees:-

OFFICE

NOMINEE

Honorary President	Dr. A. Norman Shaw
President	Mr. A. R. MacLennan
Vice President	Dr. T. F. Morris
Secretary	Mr. E. E. Bridgen
Treasurer	Mr. John MacDonald
Librarian	Mr. Chas. M. Good
Director of Observations	Mr. Frank J. DeKinder
Assistant Director of Observations	Miss I. K. Williamson
Recording Secretary	Miss M. Clark

MEMBERS OF COUNCIL

Dr. D. E. Douglas, Past President	Mr. Gordon Pender, Q.C.
Mr. G. Baron	Mrs. C. Jeffery
Mr. A. E. Edwards	Mr. G. Wedge
Dr. C. Fox	Mr. S. Sundell
Dr. G. B. Moxon	Mr. H. Vickerson

Following the business session, a "Quiz Programme" has been arranged - with audience participation - under the title "Astronomical One of a Kind".

Refreshments will be served during the Social Hour with which the meeting will terminate.

Ladies and gentlemen who are prepared to assist with the refreshments are requested to please telephone Mrs. D. Zorgo, Hu. 8-3525, so that her arrangements may be completed.

Advance notice of meeting - November 13, 1958.
Speaker - Mr. E. Russell Paterson
Subject - The Life History of a Star.

E. E. Bridgen, Secretary
6156 Sherbrooke St. W., Apt. 10
Montreal 28, Quebec

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

NOTICE OF MEETING

The next meeting of the Centre will be held at the Macdonald Physics Building, McGill University, on Thursday, November 13th, 1958, at 8:15 p.m.

Lecturer - Mr. E. Russell Paterson

Title of Lecture - The Life History of a Star

Mr. Paterson is a Past President of the Centre. He is Assistant Professor of Natural Sciences and Lecturer in Descriptive Astronomy, at Sir George Williams College.

ANNUAL MEMBERSHIP FEES:

Membership fees are payable in advance of January 1, of each year. National Council advises that publications will be sent only to those members who are in good standing at January 25th.

Fees are now payable - \$5.00 per year, except in the case of students, for whom the fee is \$3.00.

Cheques or money orders should be made payable to "Royal Astronomical Society of Canada - Montreal Centre" and sent to the Treasurer:

Mr. John MacDonald
363 Merton Avenue
St. Lambert
Montreal 23, Quebec

OBSERVATION MEETINGS:

Observation meetings are held every Saturday evening at the Centre's Observatory, at 8:30 p.m.

Observation programmes are carried out under the direction of the Director of Observations, and members are invited to take part in these programmes.

E. E. Bridgen, Secretary
6156 Sherbrooke Street West, Apt. 10
Montreal 28, Quebec

ROYAL ASTRONOMICAL SOCIETY OF CANADA

Montreal Centre

NOTICE OF MEETING

The next meeting of the Centre will be held at the Macdonald Physics Building, McGill University, on Thursday, December 11, 1958, at 8:15 p.m.

LECTURER DR. G. A. HARROWER

TITLE OF LECTURE - RADIO ASTRONOMY

Dr. Harrower is Associate Professor in the Department of Physics, Queen's University, Kingston, Ontario, and has been doing research work in Radio Astronomy.

Meeting of January 8, 1959. Speaker and subject to be announced.

At this meeting detail of Amendments to the Centre's Constitution will be submitted, and ratification of the Constitution sought.

ANNUAL MEMBERSHIP FEES:

Publications of the Society will be sent only to those members who are in good standing at January 25, and National Headquarters asks that fees be paid sufficiently in advance that the members receive publications promptly.

Fees may be sent by cheque or money order, payable to the "Royal Astronomical Society of Canada - Montreal Centre", to Treasurer of the Centre:

Mr. John MacDonald
363 Merton Avenue
St. Lambert, P.Q.

Membership fees - \$5.00 per annum. Students \$3.00.

E. E. Bridgen, Secretary
6156 Sherbrooke Street West, Apt. 10
Montreal 28, Quebec

ROYAL ASTRONOMICAL SOCIETY OF CANADA

Montreal Centre

NOTICE OF MEETING

The next meeting of the Centre will be held at the Macdonald Physics Building, McGill University, on Thursday, January 8, 1959, at 8:15 p.m.

LECTURER - Dr. V. A. Saull, Ph.D.

TITLE OF LECTURE - Some Interrelations between
Geology and Astronomy.

Dr. Saull is a member of the faculty of McGill University, Department of Geology.

At the meeting of February 12, 1959, the "G. Horsley Townsend" Memorial Lecture will be delivered by Dr. C. H. Payne Gaposchkin, B.A., D.Sc., Ph.D., whose subject will be "Variable Stars and Stellar Evolution."

Dr. Gaposchkin is Professor of Astronomy, and Chairman of the Department of Astronomy of Harvard University.

She is a member of numerous scientific societies, an authoress, and one of the leading authorities on her subject.

Observation meetings are held at the Centre's Observatory every Saturday evening, which meetings are open to all members and visitors are invited.

E. E. Bridgen, Secretary
6156 Sherbrooke Street West, Apt. 10
Montreal 28, Quebec

Telephone Hu. 4-2012

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
252 College Street, Toronto 2B, Ontario

ANNOUNCES A TWO-DAY PROGRAM OF SESSIONS

On Friday, March 13th, 1959

THE ANNUAL MEETING AND AT-HOME

will be held at 8.15 p.m.

in the

DEBATES ROOM, HART HOUSE

The University of Toronto

AGENDA: Reports of Officers and Committees

ADDRESS BY THE PRESIDENT: Helen S. Hogg, Ph.D., D.Sc., F.R.S.C.

VARIABLE STARS IN STAR CLUSTERS

Refreshments by courtesy of the Toronto Centre
Members and their guests are invited to attend

On Saturday, March 14th, 1959

- 9.30 a.m. SESSION for the presentation and discussion of papers submitted
by members, Debates Room, Hart House.
- 12.30 p.m. LUNCHEON, Graduates Dining Room, Hart House, University of
Toronto.
- 2.00 p.m. CONDUCTED TOUR, The Royal Ontario Museum, University Avenue and
Bloor Street.
- 8.00 p.m. David Dunlap Observatory Visit for out-of-town members.

Helen S. Hogg, President.

J. E. Kennedy, Secretary.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
252 College Street, Toronto 2B, Ontario

Information for Members

COMPOSITION OF THE NATIONAL COUNCIL

The National Council of the Society consists of the officers and the three elective members chosen by the accompanying ballot and, in addition, two representatives appointed by each Centre, one of whom is the President of the Centre. The names of these appointed members of Council are as follows:

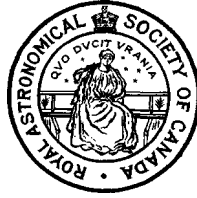
Français de Montréal Centre:	R. Grignon, Pierre Lemieux (Pres.)
Edmonton Centre:	E. S. Keeping, Earl Milton (Pres.)
Calgary Centre:	Walter H. Stilwell (Pres.)
Halifax Centre:	Rev. M.W. Burke-Gaffney, S.J., Murray E. Higgins (Pres.)
Hamilton Centre:	G. M. Vansickle, J. G. Craig (Pres.)
London Centre:	W. Wehlau (Pres.)
Montreal Centre:	C. M. Good, A. R. MacLennan (Pres.)
Ottawa Centre:	J. L. Locke, J. E. Lilly (Pres.)
Quebec Centre:	Maurice Drolet, J. Alfred Dumont (Pres.)
Toronto Centre:	J. F. Heard, Leonard Searle (Pres.)
Vancouver Centre:	J. S. Jacobs, G. Shrum (Pres.)
Victoria Centre:	Norman G. Rogers, J. A. L. Muir (Pres.)
Windsor Centre:	Lambert Huneault (Pres.)
Winnipeg Centre:	R. J. Lockhart, J. Scatliff (Pres.)

BIOGRAPHICAL NOTES ON CANDIDATES FOR ELECTIVE MEMBERS OF THE NATIONAL COUNCIL

The names of six members appear on the ballot this year for election of three to the Council. Three of these have served for the past year, the other three are newly nominated. There is no intention that this fact should influence the voting except insofar as voters may wish to decide for themselves whether it is better to have new members on Council or to have the same members serving for several years. Following are brief biographical notes on the candidates:

- ↘ Miriam S. Burland, B.A. Miss Burland is an astrophysicist at the Dominion Observatory, Ottawa. She has held many offices in the Ottawa Centre, including those of Secretary and President. She has been an elective member of the National Council for 1958 and is nominated for re-election.
- ↘ A. Vibert Douglas, M.B.E., Ph.D. Dr. Douglas is Professor of Astronomy at Queen's University, and a Past President of the Society. She has been an elective member of the National Council for 1958 and is nominated for re-election.
- William B. Hibbard, B.B.A. Mr. Hibbard is an investment banker and a resident of Detroit, Michigan. As an enthusiastic American member of our Society, he is representative of our many members in the United States.
- Robert J. Lockhart, B.A. Mr. Lockhart is Assistant Professor of Mathematics and Astronomy at the University of Manitoba. He has been very active in the promotion of the Winnipeg Centre of which he is a Past President.
- ↘ William J. McCallion, M.A. Mr. McCallion, a mathematician, is Director of University Extension at McMaster University, Hamilton. He is Past President of the Hamilton Centre and remains very active in the affairs of that Centre.
- Carl Reinhardt, B.Sc. Mr. Reinhardt is a mining engineer of Toronto and Cobalt. He is a member of the Property Committee, accepting much of the responsibility for the maintenance and operation of 252 College Street. As an elective member of the National Council for 1958, he is nominated for re-election.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA



252 COLLEGE STREET TORONTO 2B, ONTARIO

5 March, 1959.

Mr. G. Gaherty, Jr.,
636 Sydenham Avenue,
Montreal 6, P.Q.

Dear Mr. Gaherty:

We have pleasure in sending you herewith the luncheon tickets (paid) as ordered by you and also a map of the University of Toronto campus.

We do hope you will enjoy the various functions and we look forward to welcoming you.

Sincerely,

Marie Fidler,
Executive Secretary.

mf*
2 tickets

The University Story

THE UNIVERSITY OF TORONTO was founded by Royal Charter in 1827 under the name of King's College in the town of York, as the state university of the Province of Upper Canada. "York" has become Toronto, "Upper Canada" is now Ontario, and "King's College" is now the University of Toronto, the provincial university of Ontario.

The academic organization of the University is a blend of the English college system and the American faculty system. In the Faculty of Arts are four colleges: University College (the Provincial college), and the federated church supported colleges, Victoria (United Church), Trinity (Anglican), and St. Michael's (Roman Catholic).

Other divisions are the Faculties of Medicine, Law, Applied Science and Engineering, Household Science, Education, Forestry, Music, Graduate Studies, Pharmacy, and Dentistry; Schools of Hygiene, Architecture, Physical and Health Education, Social Work, and Nursing; Institutes of Aerophysics, Business Administration, and Child Study; the Connaught Medical Research Laboratories, and the Department of University Extension.

Federated with the University are three theological colleges: Knox (Presbyterian), Wycliffe (Anglican), and Emmanuel (United Church).

The Royal Ontario Museum and the Royal Conservatory of Music of Toronto are also within the University framework.

The Ontario Agricultural College and the Ontario Veterinary College at Guelph, Ontario, and the Ontario College of Art are affiliated.

The University has acquired a 26-acre tract of land west of St. George Street, where a construction program is under way to provide the new buildings that will be needed as enrolment increases. (It is estimated that by 1969 there will be more than 23,000 students). A new building in the Faculty of Arts to house the Humanities and Social Sciences; Physics, Chemistry and Engineering buildings; residences; and centres for men's and women's athletics will be the first to appear. In addition, a new \$6,000,000 Dentistry building is being constructed on Elm Street. Victoria, St. Michael's and Trinity Colleges are all planning expansion of teaching and residence facilities.

The University of Toronto is co-educational, about 30% of the enrolment being women. Nearly one half of its 13,000 students take courses in the Faculty of Arts. The Department of University

Visitors are invited to use the facilities of the Book Store which sells books, postcards and pocket books, as well as text books, stationery and supplies. This is a division of the University of Toronto Press which publishes many books, journals and pamphlets. The new Press building on the northwest corner of the main campus houses editorial and administrative offices of the Press, with the Book Store on the ground floor.

Off the Campus . . .

Located 12 miles north of the city limits, the David Dunlap Observatory was established in 1935 for the purposes of research, advanced training, and the fostering of public interest in astronomy. The 74-inch reflector is the fourth largest in the world. The use of radio telescopes is a recent development in the Observatory's astronomical research. The Observatory is open to the public on Wednesday afternoons from 2 to 4 p.m. throughout the year, and on Saturday evenings from April to October inclusive. Saturday visitors should make reservations in advance.

The Institute of Aerophysics was established in 1949 for training scientists in the basic physics of gases, applied aerodynamics and ballistics, with emphasis on rocket propulsion and supersonic flight, and for conducting research. This laboratory is the only one of its kind in Canada. In the fall of 1958 the Institute will move to a new site—east off Dufferin Street, south of Steeles Avenue, although part of its work will still be carried on at Downsview Airport.

The Dufferin Division of the Connaught Medical Research Laboratories, on the northwest outskirts of Toronto, is a 145-acre farm property with modern laboratory buildings and quarters for animals.

The Faculty of Pharmacy, at 45 Gerrard Street East, Toronto, has one of the largest and most modern dispensing laboratories on the continent.

The Institute of Child Study, 45 Walmer Road, just north of the main campus, is a world-renowned teaching and research centre in child psychology.

Glendon Hall, an 81-acre estate at 1275 Bayview Avenue, is used by the Faculty of Law (housed in the former residence), and by the Faculties of Forestry and Pharmacy and the Department of Botany for research projects.

In Haliburton County, 180 miles north of Toronto, is the University Forest of 17,000 acres, where forestry students do field work in timber cruising, mapping and silviculture studies.

At Gull Lake, 150 miles to the north, is the University's Survey Camp of 172 acres.



University of Toronto VISITORS' GUIDE

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

NOTICE OF MEETING

<u>Time</u>	<u>Day</u>	<u>Date</u>	<u>Place</u>
8:15 p.m.	Thursday	March 12, 1959	The Macdonald Physics Building of McGill University.

LECTURER - V. A. Saull, B.Sc., D.Sc.

TITLE OF LECTURE - Some Interrelations between Geology
and Astronomy.

Dr. Saull is Assistant Professor of Geology at McGill University.

This lecture was to have been delivered at the January 1959 meeting of the Centre, but was postponed unavoidably.

Members are asked to bring friends and others who might be interested. Meetings are open to the public.

Annual Dues: Dues for 1959 became payable in January, and members who have overlooked payment are reminded that National Headquarters does not now send publications until payment has been received. Dues should be sent to the Centre's Treasurer, Mr. John MacDonald, 363 Merton Avenue, St. Lambert, Quebec.

E. E. Bridgen, Secretary
Montreal Centre
6156 Sherbrooke Street West
Apt. 10
Montreal 28, Quebec

ROYAL ASTRONOMICAL SOCIETY OF CANADA

Montreal Centre

OBSERVATION COMMITTEE

DIRECTOR OF OBSERVATIONS F. J. DeKinder 10724 Enile Street
 Montreal 12. Tel. DU.8-0682

ASSISTANT DIRECTOR Miss I. K. Williamson 5162 Belmore Ave.
 OF OBSERVATIONS Montreal 29. Tel. HU.6-1218

<u>Field of Observation</u>	<u>Chairman</u>	<u>Address</u>
Constellation Study	E. A. Bridgen	6156 Sherbrooke St. W. Montreal 28. Tel. HU.4-2012
I.G.C. Aurora Programme	Mrs. D. Zorgo	5352 Cumberland Ave. Montreal 29. Tel. HU.8-3525
Lunar Observations	George Wedge	5945 Cote des Neiges Rd. Montreal 26. Tel.Re.1-2148
Lunar Meteor Search	G. Gaherty, Jr.	636 Sydenham Ave. Montreal 6. Tel. HU.4-2402
Nova Search	Mrs. M. I. Yane	5375 Cumberland Ave. Montreal 29. Tel. HU.8-8333
Lunar Occultations	C. M. Good	4169 West Hill Ave. Montreal 25. Tel. FU.4-0713
Variable Stars	F. P. Morgan	294 Argyle Ave. Montreal 19. Tel. PO.6-6969
Planetary Observations	Dr. T. F. Morris	114 Dobie Ave. Montreal 16. Tel. RE.7-2593
Comets	W. H. Birtles	5400 Bannatyne Ave. Montreal 19. Tel. PO.8-7126
Migratory Birds	Claude Bedard	6222 Delormier Ave. Montreal 35. Tel. RA.9-0270
Sun-spots (naked-eye)	R. Venor	5180 St. Ignatius Ave. Montreal 29. Tel. HU.9-1736
Sun-spots (telescopic)	F. DeKinder	(See above)
I.G.C. Meteor Programme	E. A. Bridgen I. K. Williamson	(See above) (See above)
Eclipses	I. K. Williamson	(See above)
Messier & Herschel Clubs	I. K. Williamson	(See above)
Asteroids	C. Papacosmas	3260 Barclay Ave. Montreal 35. Tel. RE.3-6902

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
252 College Street, Toronto 2B, Ontario

A G E N D A
of
ANNUAL MEETING

Friday, March 13, 1959, at 8:15 p.m.

Debates Room, Hart House

1. Minutes of the Annual Meeting of March 28, 1958.
2. Tribute to the memory of deceased members.
3. Roll call of members present by Centres.
4. Report of the Board of Trustees.
5. Report of the Treasurer.
6. Report of the Librarian.
7. Report of the Secretary.
8. Report of the President.
9. Report of the Scrutineers on the Election of Officers for 1959;
at the conclusion of this report, the officers will be presented
to the audience.
10. Introduction of the retiring President, Dr. Helen S. Hogg, followed
by the Presidential Address - "Variable Stars in Star Clusters".

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
252 College Street, Toronto 2B, Ontario

STATEMENT OF GENERAL ACCOUNT 1958

I N C O M E

Comparison 1957

Membership Fees:

R.A.S.C. Centres	\$ 4,661.56		\$ 3,084.83	
Individual Members	2,293.86		1,418.99	
Life Membership Reserve	<u>120.32</u>	\$ 7,075.74	<u>117.98</u>	\$ 4,621.80

Grants and Donations:

Government of Canada	\$ 3,500.00		\$ 3,500.00	
Province of Ontario	1,000.00		1,000.00	
Miscellaneous contributions	<u>40.00</u>	4,540.00	<u>771.05</u>	5,271.05

Publications (Sales & subscriptions)

Journal of the R.A.S.C.	\$ 1,192.37		\$ 1,441.22	
Observer's Handbook	2,985.47		2,665.21	
Special issues and reprints	<u>4,235.12</u>		<u>2,322.96</u>	
	8,412.96		6,429.39	
Less: Agents' discounts	<u>583.45</u>	7,829.51	<u>216.33</u>	6,213.06
Advertising Revenue		1,222.92		995.65
Proceeds from sale of insignia		<u>978.00</u>		

GROSS INCOME

\$21,646.27 \$17,101.55

E X P E N D I T U R E S

Printing of publications	\$12,276.57	\$10,793.13
Insignia and lapel buttons	794.00	
Office salaries	3,842.35	3,678.90
Stationery, printing & off. supp.	1,400.13	435.10
Grants to R.A.S.C. Centres		88.00
Rental allowances	600.00	622.30
Postage and express	400.24	238.81
General expenses	182.04	199.73
Library expenses	46.91	33.94
Telephone	129.13	121.22
Bank charges & foreign exchange	176.28	162.06
Provision for doubtful accounts	117.46	155.02
Depreciation on furniture & equipment	<u>264.60</u>	<u>245.00</u>

TOTAL EXPENDITURES

20,229.71 16,773.21

Net Operating surplus

\$ 1,416.46 \$ 328.35



THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
252 College Street, Toronto 2B, Ontario

REPORT OF THE LIBRARIAN, 1958

321 books were borrowed from the Library in 1958. This is much better than last year's total of 243. 11 books were borrowed by mail with the special labels used for return.

There were 10 requests for a list of slides and films available.

3 boxes of slides were borrowed.

19 new books were added to the Library during 1958 and many more are on order. These are to be charged against the donations made by Mr. Carl Reinhardt in the past.

Approximately 100 of the newer books have been catalogued. A list has been made, and may be had from the Library on request.

Revenue from the sale of back numbers of Journals was \$350.90 for 1958. There is a shortage of some of the back numbers of the Journal, especially for 1957 and the first issue of 1954. We would appreciate help from the general membership in replenishing our stock.

13 March, 1959

W. T. Tutte,
Librarian.

REPORT OF THE NATIONAL SECRETARY, 1958

Four meetings of the National Council were held in 1958; the Executive Committee held nine regular and three emergency meetings during the year. Our President, as Chairman of these meetings, was absent on only one occasion while attending an astronomical conference in Moscow. The many accomplishments of the Society in 1958 were largely due to the leadership provided by the President both to the membership and to the National Officers, particularly throughout the lengthy business sessions.

This year, the Society appointed three Technical Correspondents and one Telescope Correspondent. They are Miss Miriam S. Burland of the Dominion Observatory, Miss Ruth J. Northcott of the David Dunlap Observatory, Dr. Jean K. McDonald of the Dominion Astrophysical Observatory and Mr. R. Broadfoot of the Toronto Centre. The enquiries directed to the National Office are divided on a regional basis, as well as on technical content, to permit rapid and efficient handling. We are most indebted to our Correspondents for answering these technical enquiries; we believe this service gives our Society more of a "National" characteristic.

Mrs. Marie Fidler was appointed full-time Executive Secretary in mid-September; she had assisted on a part-time basis in the office for some months prior to this. It is noted with much satisfaction that the improvements implemented by Mrs. Fidler in the operation of the National Office have been reflected in better co-operation and response from the Executive Officers of the 14 Centres.

The Membership of the Society stands as of March 1, 1959, at 1,706, made up as follows:

Centre Francais de Montreal	- 38	Ottawa	- 81
Calgary	- 61	Quebec	- 64
Edmonton	- 28	Toronto	- 458
Halifax	- 14	Vancouver	- 54
Hamilton	- 67	Victoria	- 71
London	- 45	Windsor	- 35
Montreal	- 165	Winnipeg	- 40
		Unattached	- 485
		(including Life)	

The number of Honorary Members in the Society during 1958 remained at 13. For the first time in almost two decades, a membership list for the Society has been prepared and printed. Members may obtain a copy by writing to the National Office.

No award was made of the Society's Gold Medal nor of the Chant Medal in 1958. The "Service Award" was instituted; regulations pertaining to this have been approved by the National Council.

We are very pleased that the first recipient of the "Servier Award" and Honorary Secretary of the Society, Mr. E.J.A. Kennedy, is present with us this evening.

The Society is taking another step forward in enlarging the Program of the Annual Meeting by including a Papers Session and other functions. The success of this venture rests with the interest and response of the members.

As the roll call has indicated, representatives are present from eleven of our Centres. Regrets have been received from a large number of members who, because of distance or other reasons, are unable to attend. We look forward to an Annual Meeting in the future when all of our 14 Centres will be represented.

Je suis heureux de souhaiter la bienvenue aux représentants du Centre Français de Montréal. Des activités actuellement en cours au Centre de Québec ont empêché ce groupe d'envoyer un délégué à notre congrès annuel. Il ne conviendrait pas, cependant, de passer sous silence le fait que le Centre de Québec a fourni une aide généreuse à des groupes d'astronomes amateurs de Chicoutimi, de Lévis et des Trois-Rivières. C'est de tels essais qui produisent éventuellement les nouveaux centres de notre Société.

The reports submitted by the Secretaries of the Centres will be published in the Journal. In reading these reports, you will be aware of the planning and foresight which has produced so many commendable lecture programs and other successful Centre activities. We hope the achievements of the past year will inspire you to greater accomplishments in the year ahead.

March 1, 1959

J. E. Kennedy
J. E. Kennedy,
National Secretary

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

Session for the Presentation
of Papers

Debates Room, Hart House, Toronto

March 14, 1959, 9:30 a.m. - 12:00 noon

Chairman: Peter M. Millman, Ph.D.,
First Vice-President of the Society

Isabel Williamson,
Montreal

What the Montreal Centre is
trying to accomplish by its
Observation Program.

R. W. Nicholls,
W. H. Parkinson and M.D. Watson,
London

Shock Excitation of Powdered Solids,
Astrophysical applications.

Earl Milton and E. S. Keeping,
Edmonton

Report of the Edmonton Centre
Observer Group

J. E. Kennedy,
Toronto

Historical Research in Astronomy

INTERMISSION

George E. Wedge,
Montreal

Activities of the Lunar Section
of the Montreal Centre.

R. V. Ramsay and
A. L. Ostrander,
Toronto

An Investigation of Sunrise
Flares within a Lunar Crater.

F. J. DeKinder,
Montreal

Ten years of Regular Solar
Observations.

P. M. Millman and
Miriam S. Burland,
Ottawa

The I.G.Y. Program of Meteor Observa-
tions.

W. J. McCallion and
T. Norton,
Hamilton

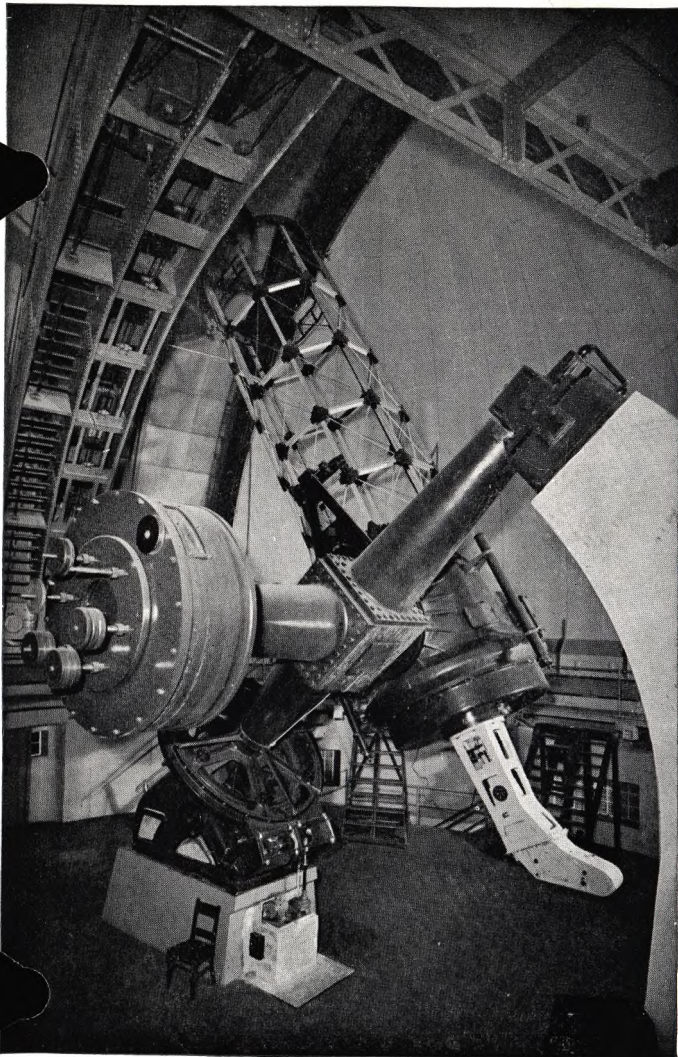
The Spitz Planetarium, McMaster
University.

X W. B. Hibbard,
Detroit

Applications of the van den Bergh
Method to the Study of Eclipse Cycles.

Committee arranging the Session:

Helen S. Hogg, J. F. Heard
D. A. MacRae, J. E. Kennedy



Inside the 61-foot dome, the 74-inch telescope as seen from the north-east.

OBSERVATORY VISITING HOURS

The Observatory is open to the public at the following times:

Wednesday afternoons,
throughout the
year from 2:00 to 4:00 p.m.

Saturday evenings,
from April 1st to
October 31st, for two hours, starting half
hour after sunset.

Weather permitting, astronomical objects may be viewed through the telescopes on Saturday evenings. All visitors are asked to make reservations for Saturday evenings in advance.

Admission is free.

Phones:

David Dunlap Observatory, Richmond Hill Tu. 4-2112.

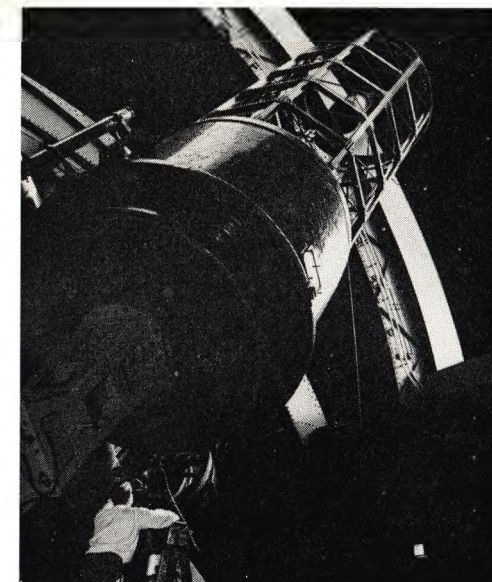
University of Toronto, Publicity Department, Walnut
3-6611, Local 232.

The Royal Astronomical Society of Canada

Membership in this Society is open to anyone interested in astronomy. The Society has centres in Halifax, N.S., Montreal and Quebec, P.Q.; Ottawa, Toronto, Hamilton, London, and Windsor, Ontario; Winnipeg, Manitoba; Saskatoon, Saskatchewan; Edmonton, Alberta; Vancouver and Victoria, British Columbia. Further information may be obtained at the Society's Headquarters, 252 College Street, Toronto 2B, Ontario.

July, 1957.

15M-8-57



The
David Dunlap Observatory
of the
University of Toronto

Richmond Hill

Ontario



Dome housing large telescope and Administration Building.

The David Dunlap Observatory was the magnificent gift of the late Mrs. Jessie Dunlap to the University of Toronto as a memorial to her husband, David Alexander Dunlap. The plan was organised by Dr. C. A. Chant, first Director of the Observatory. The site and equipment were decided upon with three objects in view: astronomical research, the training of advanced students at the University, and the fostering of public interest in astronomy.

The Observatory is twelve miles north of the city limits of Toronto, a mile south of Richmond Hill, and five-eighths of a mile east of Yonge Street. It is about 800 feet above sea level, or 500 feet above downtown Toronto.

The main telescope of the Observatory is a 74-inch reflector. At the time of its installation in 1935 this was the second largest telescope in the world, surpassed in size only by the 100-inch at Mount Wilson, California. Since then, an 82-inch has been put into operation in Texas, and a 200-inch in California.

The primary optical element of the telescope is the mirror. This is a disc of glass over 74 inches in diameter.

twelve inches thick, and weighing nearly two and a half tons. The upper surface is ground and polished to a concave optical surface, with a concavity about one inch deep in the centre. This upper surface, accurate to within two one-millionths of an inch, is coated under vacuum with a thin, highly-reflecting layer of aluminum.

The mirror rests in a steel cell at the bottom of the telescope tube. The tube is made as an open framework, to permit free circulation of air. Light from the stars comes down the tube, is reflected back from the aluminum surface, up the tube to a smaller secondary mirror near the top, back down the tube again, and through a seven-inch hole drilled through the centre of the main mirror. The stars may then be viewed through an eyepiece below the great mirror, or the light may be analysed by means of a spectrograph attached to the bottom of the telescope.

To permit setting the telescope to any part of the sky, it is mounted to move about two axes at right angles to each other. One of these axes is parallel to the earth's axis. Divided circles mounted on the two axes allow the position of any object to be set directly from catalogue positions. A clock keeps the telescope rotating at the rate of one revolution each twenty-four hours, to counteract the rotation of the earth. Thus, once the telescope is set on a star, the clock-drive automatically keeps it pointing to that star.

The telescope is covered by a hemispherical dome 61 feet in diameter. This protects it from the weather. For observation purposes there is a great opening, 15 feet by 50 feet. The whole dome, weighing about 80 tons, can be rotated so that this opening may give access to the heavens in whatever direction the telescope points. When the telescope is not in use, the opening is covered by two large shutters, which roll together horizontally.

The research work of this Observatory has been until now chiefly in two fields: the study of the spectra of stars and the study of the light variations of variable stars. Spectra are studied by photographs taken with the spectrograph of the 74-inch telescope and from records made with a photoelectric spectrophotometer also located at the base of the large telescope. From these



The great globular star cluster in Hercules, photographed with the 74-inch reflecting telescope of the David Dunlap Observatory. Though this photograph shows stars nearly one hundred thousand times as faint as the limit of naked-eye visibility, all the stars shown are intrinsically brighter than our own sun. The light which made this photograph left the cluster about 30,000 years ago. The cluster contains over a hundred thousand stars.

studies are obtained the speeds of approach or recession of the stars and the physical and chemical conditions of the stars' atmospheres. Light variations of variable stars are studied from direct photographs taken with the large telescope and also with a photoelectric photometer attached to one of the smaller telescopes. Recently the Observatory has also embarked upon research in radio astronomy. To the east of the main buildings are several radio telescopes used for this purpose.

The Administration Building houses offices, apparatus for measuring plates, a library, a lecture room, and a machine shop. Two of the small domes on the Administration Building are in use. The south dome houses a 19-inch reflector built and donated by Dr. R. K. Young. The north dome houses a 6-inch refractor.

APR - 4 RECD

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

N O T I C E O F M E E T I N G

<u>Time</u>	<u>Day</u>	<u>Date</u>	<u>Place</u>
8:15 p.m.	Thursday	April 9, 1959	The Macdonald Physics Building of McGill University

LECTURER - Ian Halliday, Ph.D.

TITLE OF LECTURE - Meteorites - Arrivals from Space.

In 1952 Dr. Halliday joined the Staff of the Department of Mines and Technical Surveys, at the Dominion Observatory, Ottawa, and since 1955 has been in charge of the Meteor Observing Section, Department of Stellar Physics.

Specimens of Meteorites may be on display.

Meetings of the Centre are open to the public, and members are asked to bring friends, or prospective members.

The only qualification for membership is "Interest in Astronomy."

May Meeting

This will be held on May 14th, and will be the closing meeting of the season.

Members who may have overlooked payment of 1959 dues should remit as early as possible to the Treasurer, Mr. John MacDonald, 363 Merton Avenue, St. Lambert, Quebec. National Headquarters will not now send publications until current year's dues are received.

E. E. Bridgen, Secretary
Montreal Centre, R.A.S.C.
6156 Sherbrooke St. West, Apt. 10
Montreal 28, Quebec
Telephone Hu. 4-2012.

ROYAL ASTRONOMICAL SOCIETY OF CANADA

Montreal Centre

NOTICE OF MEETING

<u>Time</u>	<u>Day</u>	<u>Date</u>	<u>Place</u>
8:15 p.m.	Thursday	May 14, 1959	The Macdonald Physics Building of McGill University.

This is the closing meeting of the 1958-1959 season, and it is hoped that every member will make an effort to attend.

Friends and visitors interested in Astronomy are cordially invited.

By courtesy of the Bell Telephone Company of Canada, the film:

"The D.E.W. Line Story"

will be shown. This is a record of achievement in Canada's Northland.

A social gathering, during which refreshments will be served, will follow the showing of the film.

Anyone wishing to help in the provision of refreshments is requested to communicate with Mrs. D. Zorgo, Chairman of the Refreshment Committee, at Hu. 8-3525.

The Observation meetings held at the Centre's Observatory on Saturday evenings will continue without interruption throughout the year.

E. E. Bridgen, Secretary
Montreal Centre, R.A.S.C.
6156 Sherbrooke Street West, Apt. 10
Montreal 28, Quebec
Telephone Hu. 4-2012

AUG 22 REC'D

ROYAL ASTRONOMICAL SOCIETY OF CANADA

Toronto Centre

The American Astronomical Society, the professional astronomical society in North America, is meeting in Toronto Aug. 31 to Sept. 2. On this occasion the annual Henry Norris Russell Lecture will be presented.

Speaker: Dr. Gerard P. Kuiper, Yerkes Observatory
Title: PLANETS AND SATELLITES
Date: Tuesday, September 1 -- 8:30 p.m.
Place: Royal Ontario Museum Theatre

This lecture, of a semi-technical nature, is intended to present a summary of the state of knowledge in a particular field of astronomical research. As such it is felt that Mr. Kuiper's address will be of interest to members of the R. A. S. C. No tickets of admission are required.

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

OCT 16 1959

NOTICE OF ANNUAL MEETING

OCT 16 1959

The 41st Annual General Meeting of the Montreal Centre, Royal Astronomical Society of Canada, will be held at 8:15 p.m., on Thursday, October 22nd 1959, at the Macdonald Physics Building, McGill University.

Reports of officers for the past year will be presented. Officers and Council Members for the 1959-1960 will be elected.

The following list of nominees will be submitted by the Council in accordance with the Constitution:

<u>OFFICE</u>	<u>NOMINEE</u>
Honorary President	Dr. A. Norman Shaw
President	A. R. MacLennan
Vice-President	W. A. Warren
Secretary	E. E. Bridgen
Treasurer	John MacDonald
Recording Secretary	Miss M. Clark
Librarian	Chas. M. Good
Director of Observations	Frank J. DeKinder
Assistant Director of Observations	Miss I. K. Williamson

MEMBERS OF COUNCIL

Dr. Chas. Fox	H. Vickerson
Dr. T. F. Morris	H. Bunker
Gordon M. Pender, Q.C.	W. H. Gilbert
George Wedge	W. J. Cullinan
S. M. Sundell	

The Centre's programmes have been vigorously maintained, and after completion of the business session, slides, typical of the Centre in action, will be shown.

During the social hour, with which the meeting will terminate, refreshments will be served.

Will members desirous of assisting with refreshments kindly telephone Mrs. D. Zorgo? Telephone Da. 2-9824.

Advance notice: The speaker at the meeting of November 12th will be Miss Ruth J. Northcott of David Dunlap Observatory, who will speak on Astronomy in Russia.

E. E. Bridgen, Secretary
Montreal Centre, R.A.S.C.
6156 Sherbrooke Street West, Apt. 10
Montreal 28, Quebec
Telephone Hu. 4-2012

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

The next meeting of the Centre will be held at the Macdonald Physics Building, McGill University, on Thursday, November 12th, 1959, at 8:15 p.m.

The speaker will be:

Miss Ruth J. Northcott

Subject:

"An Astronomer's Visit to the U.S.S.R."

Miss Northcott is a member of the staff of the David Dunlap Observatory, and Editor of the Society's Handbook.

Course of Elementary Lectures

A course of elementary lectures in Astronomy has been arranged to be given on Tuesdays, commencing January 5th, 1960, by Miss I. K. Williamson.

This course is open to members of the Centre, and to others interested and becoming members. Application forms will be available at meetings of the Centre. Place of meeting to be announced later. The fee for the course is one dollar.

Annual Membership Fees

Membership fees are payable in advance of January 1st, of each year. National Headquarters requires that members be in good standing by January 25th, otherwise it will not be possible to send the Society's publications.

Cheques or money orders in payment of fees should be made payable to "Royal Astronomical Society of Canada - Montreal Centre" and sent to:

Mr. John Macdonald
363 Merton Avenue
St. Lambert, Quebec

Advance Notice of Meeting

The meeting of December 10th, 1959, will be addressed by

J. M. Berrill, Ph.D.
Professor of Marine Biology - McGill University
who will speak of the possibility of life on other planets.

E. D. Bridgen, Secretary
Montreal Centre, R.A.S.C.
6156 Sherbrooke Street West, Apt. 10
Montreal 28, Quebec

Royal Astronomical Society of Canada

Montreal Centre

Observations Committee

Agenda for meeting of Thursday November 19th 1959.

1. A word from the Chairman.
 2. Minutes of last meeting
 3. Business reports of subcommittees.
 4. Rearrangement of subcommittees.
 5. National observations committee.
 6. Saturday night programs.
 7. Duties of each member of the committee.
 8. Keys to the observatory.
 9. Tools and Equipment.
 10. Inventory of equipment.
 11. Maintenance of equipment.
 12. Telescopes and equipment on loan.
 13. Reports on condition of equipment.
-

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

NOTICE OF MEETING

The next meeting of the Centre will be held at the Macdonald Physics Building, McGill University, on Thursday, December 10th, 1959, at 8:15 p.m.

The speaker will be:

N. J. Berrill, Ph.D.

Subject:

"Is there life on other Planets?"

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Montreal 28, Quebec

JAN - 8 RECD

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

Notice of Meeting

The next meeting of the Centre will be held at the MacDonalD Physics Building, McGill University, on Thursday, January 14th, 1960 at 8:15 p.m.

The speaker will be H. Reeves, Ph D., of the University of Montreal.

Subject: Neutrino Astronomy

The Course of Elementary Lectures in astronomy, to be given by Miss I. K. Williamson, has been postponed for two weeks. The first of the four lectures will be given on Tuesday, January 19th instead of January 5th. There is still time, therefore, to register for the course, which is open to members of the Centre and to others interested in becoming members. Please contact Miss Williamson at HU.6-1218.

The TOWNSEND MEMORIAL LECTURE

The fifth Townsend Memorial Lecture will be held in the MacDonalD Physics Building on Thursday, February 11th at 8:15 p.m.

The speaker will be Dr. Lawrence Aller, Professor of Astronomy, University of Michigan. Dr. Aller is author of a number of books and is co-author with Goldberg of "Atoms, Stars and Nebulae" in the Harvard series.

Subject: Formation of Elements in the Stars.

FEEs

Annual membership fees of \$5.00 (Students \$3.00) are now due and payment may be made by cheque or money order to "The Royal Astronomical Society of Canada, Montreal Centre" and mailed to our Treasurer,

Mr. John MacDonalD
363 Merton Ave.,
St. Lambert, Quebec.

A. R. MacLennan, President
615 Pine Ave.,
St. Lambert, Quebec.

FEB 23 1960

FEB 25 1960

MEETINGS OF THE NATIONAL SOCIETY

Two Meetings in 1960

This is to notify you that in 1960 there will be two separate meetings of the National Society, in Toronto and in Montreal, in place of the single meeting which last year in Toronto combined the Annual Meeting, the At-Home and the Session for Papers. The reason for not combining the Annual (Business) Meeting with the Montreal Meeting is that, according to the terms of the incorporation of the Society, an annual meeting must be held in the Province of incorporation, namely, Ontario.

The Annual Meeting, Toronto, Friday, March 11, 1960

This meeting, to be held at 8:00 p.m. on Friday, March 11, in Room 1035, Wallberg Building, University of Toronto, is a brief business meeting at which the Annual Reports of the Officers of the Society will be received and the results of balloting for the 1960 Offices and Council Members will be announced. The Annual Reports will be distributed soon to all members of the Society for the particular benefit of those members who cannot be present at this Annual Meeting.

Two-day Meeting, Montreal, Friday-Saturday, April 8-9, 1960

The National Council has accepted the invitation of the Montreal Centre to hold a two-day meeting, similar to last year's Toronto meeting, in Montreal on April 8 and 9. This meeting will include a brief review of the Annual Reports of the Officers, the Address by the President, Dr. Andrew McKellar, a session for papers by members of the Society, a visit to the Montreal Centre Observatory, and social events.

It is hoped that many members of the Society will find it possible to visit Montreal for the Two-day Meeting. A detailed programme of events and a reply form will be mailed to members about mid-March.

Papers for the Montreal Meeting

Members who will have papers to present at the Montreal Meeting are urged to communicate titles and 100-word abstracts as soon as possible to Dr. Andrew McKellar, Dominion Astrophysical Observatory, Royal Oak, B.C. A paper may be read by another member if the author cannot be present. Time allowed for presentation will be about ten minutes.

INFORMATION FOR MEMBERS

COMPOSITION OF THE NATIONAL COUNCIL

The National Council of the Society consists of the officers and the three elective members chosen by the accompanying Ballot and, in addition, two representatives appointed by each Centre, one of whom is the President of the Centre. The names of these appointed members of Council are as follows:

Calgary Centre	- E. J. McCullough, T. W. Laviolette (Pres.)
Edmonton Centre	- Earl Milton, J. Harrington (Pres.)
Halifax Centre	- Rev. M. W. Burke-Gaffney, S. J., B.W. Allen (Pres.)
Hamilton Centre	- G. M. Vansickle, S. J. Buntain (Pres.)
London Centre	- W. Gordon Graham, R. W. Richardson (Pres.)
Montreal Centre	- C. M. Good, A. R. MacLennan (Pres.)
Centre Francais de Montreal	- Romeo Grignon, Pierre Lemieux (Pres.)
Ottawa Centre	- W. L. Orr, Ian Halliday (Pres.)
Quebec Centre	- Maurice Drolet, J. Alfred Dumont (Pres.)
Toronto Centre	- J. F. Heard, Leonard Searle (Pres.)
Vancouver Centre	- J. A. Jacobs, V. J. Okulitch (Pres.)
Victoria Centre	- Norman G. Rogers, J. A. L. Muir (Pres.)
Windsor Centre	- William G. Mitchell, Lambert Huneault (Pres.)
Winnipeg Centre	- R. J. Lockhart, J. Scatliff (Pres.)

BIOGRAPHICAL NOTES ON CANDIDATES FOR TREASURER AND ELECTIVE MEMBERS OF THE NATIONAL COUNCIL:

Treasurer: Because of the resignation of J. H. Horning, M.A., Treasurer for nearly 25 years, a new candidate is put forward on the Ballot for this office. William R. Hossack, Ph.D., has served as President of the Toronto Centre and National Librarian. At one time Lecturer in Astronomy at the University of Toronto, he is now Operations Research Consultant with Stevenson and Kellog Ltd., Toronto.

Elective Members of the National Council:

The names of five members appear on the Ballot for election of three to the Council.

Lionel H. Clark Mr. Clark is a Field Engineer with Bellows Pneumatic Devices, Ltd., Toronto. He is a former President of the Toronto Centre and is active in the Observation and Study Group.

Frank J. DeKinder Mr. DeKinder is a Chant Medallist, Past President and Director of Observations of the Montreal Centre.

David A. Keys, Ph.D., D.Sc., F.R.S.C. Dr. Keys is a Life member, formerly Professor of Physics at McGill University, later Vice-President of the National Research Council in charge of Atomic Energy Division, Chalk River, is now Scientific Adviser to the President of Atomic Energy of Canada Limited.

Walter J. Stilwell, M.A. Mr. Stilwell, organizer and first President of the Calgary Centre, is now a member of the teaching staff of the University of Alberta in Calgary.

Anne B. Underhill, M.A., Ph.D. Dr. Underhill is an astrophysicist at the Dominion Astrophysical Observatory. She has been Councillor and Second Vice-President of the Victoria Centre and is a former member of the Vancouver Centre.

MAR - 4 RECD

ROYAL ASTRONOMICAL SOCIETY OF CANADA
Montreal Centre

NOTICE OF MEETING

The next meeting of the Centre will be held at the MacDonald Physics Building, McGill University, on Thursday, March 10, 1960, at 8:15 p.m.

The Speaker will be:-

E. E. Bridgen

Secretary of the Montreal Centre, R.A.S.C.

Subject:-

"The Winter Sky as seen from Jamaica"

FEES:

Membership fees - \$5.00 (students - \$3.00)

National Headquarters require that for members to be considered in good standing, fees should be received not later than January 25, of each year.

Members who may have overlooked payment are asked to remit, by cheque or Money Order, payable to "Royal Astronomical Society of Canada - Montreal Centre," to the Treasurer:

Mr. John MacDonald
363 Merton Avenue
St. Lambert, Quebec

APRIL MEETING:

The Centre's April lecture meeting will be held on Friday, April 8, 1960, in conjunction with the General Meeting of the Royal Astronomical Society of Canada, which is to be held in Montreal. Full information will be given in a later announcement.

E. E. Bridgen, Secretary
6156 Sherbrooke Street West, Apt. 10
Montreal 28, Quebec
Telephone, Hu. 4-2012

BE SURE TO SEND YOUR BALLOTS
/RE ELECTION OF NATIONAL OFFICERS/
TO TORONTO IN TIME FOR
THE ANNUAL MEETING ON MARCH 11TH

MAR - 4 REC'D

OF CANADA

MEETING

held at the MacDonald Physics
Building, March 10, 1960, at 8:15 p.m.

The Speaker will be:-

E. E. Bridgen

Secretary of the Montreal Centre, R.A.S.C.

Subject:-

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ANNOUNCES

A TWO-DAY PROGRAMME OF SESSIONS

ON APRIL 8th and 9th, 1960

AT MONTREAL, QUEBEC

On Friday, April 8th, 1960

THE GENERAL ASSEMBLY AND "AT-HOME"

will be held at 8:15 p.m.

in the

McCONNELL ENGINEERING BUILDING, ROOM 204

McGILL UNIVERSITY, MONTREAL, QUEBEC

AGENDA: Summary of Reports of Officers and Committees

ADDRESS BY THE PRESIDENT: Andrew McKellar, Ph.D., F.R.S.C., Dominion Astrophysical Observatory, Royal Oak, B.C.

SOME TOPICS OF MOLECULAR ASTROPHYSICS

Refreshments courtesy of the Montreal Centre and le Centre Francais de Montreal. An invitation is extended to members and their guests.

* * * * *

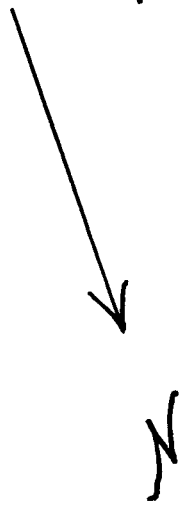
On Saturday, April 9th, 1960

- 9:30 a.m. to 12:00 p.m. SESSION FOR PAPERS - presentation and discussion of papers by R.A.S.C. members, Room 204, McConnell Engineering Building.
- 12:30 p.m. LUNCHEON, Berkeley Hotel, 1188 Sherbrooke St. West.
- 2:00 p.m. MEETING OF THE NATIONAL COUNCIL.
- 2:30 p.m. DISCUSSION PERIOD - Co-operation between Observing Centres.
- 2:00-4:00 p.m. CONDUCTED TOUR OF MOUNT ROYAL AND ST. HELEN'S ISLAND - by private car, courtesy of the Montreal Centre and le Centre Francais de Montreal. (Members and their guests are invited.)
- 8:00 p.m. VISIT TO THE OBSERVATORY OF THE MONTREAL CENTRE on upper McGill campus. Open to all members and their guests.

Andrew McKellar, President

J. E. Kennedy, Secretary

MONTREAL

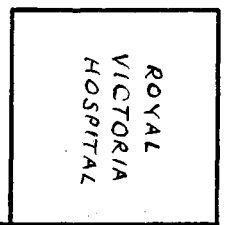


OBSERVATION
MONTREAL CENTRE

DOUGLAS HALL



MOLSON
STADIUM



ROYAL
VICTORIA
HOSPITAL

PINE AVE.

MC GREGOR

MC TAVISH

MC GREGOR

MC CONNELL
ENGINEERING
BUILDING

UNIVERSITY

PRINCE ARTHUR

MILTON

SHERBROOKE

BURNSIDE

ST. CATHERINE

DORCHESTER

Y.W.C.A.

MOUNTAIN

LA
SALLE

DRUMMOND

RITZ
CARLETON

BERKELEY
HOTEL

Y.M.C.A.

STANLEY

WINDSOR
HOTEL

WINDSOR

PEEL

SHERATON
MT. ROYAL
HOTEL

DOMINION
SQUARE

METCALFE

SUN LIFE
BUILDING

MANSFIELD

MC GILL COLLEGE

UNIVERSITY

MAR 26 REC'D

OVER

INFORMATION REGARDING HOTEL ACCOMMODATION

Members are to make their own reservations for overnight accommodation. The following information may be helpful.

LAURENTIEN HOTEL, Dominion Square, Montreal. A block of 25 rooms is being held for R.A.S.C. members. When making reservations be sure to mention that you are attending the R.A.S.C. meetings.

RATES:	Single:	From \$7.50
	Double:	From \$10.50
	Double; with twin beds:	From \$12.00

Y.W.C.A., 1355 Dorchester Street West

RATES:	Single:	\$3.00
	Single; with adjoining bath:	\$4.50
	Single; with private bath:	\$4.75
	Double:	\$5.50
	Double; with adjoining bath:	\$8.00
	Double; with private bath:	\$8.50

Y.M.C.A., 1441 Drummond Street

RATES:	Single:	\$3.00 and \$3.50
	Double:	\$5.00

ROYAL ASTRONOMICAL SOCIETY OF CANADA
 Montreal Centre

NOVA SEARCH REPORT

Observer Area No.
 Address Month OCT 19 60
 Time Used UT
 Telephone No. Power of Binoculars

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
HERK Time		-							-	0		-				
ANDY		2							2	2		2				
Mag.		6							6	6		6				

Date	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
Time																
Mag.																

In recording time of observation, please use 24-hour system, with 0 hours at midnight, and indicate whether Eastern Standard or Daylight Time.

This report form is to be used for negative reports only. Please mail report to the chairman promptly at the end of each month. If you note anything unusual in your area, PLEASE PHONE CHAIRMAN IMMEDIATELY.

Chairman, Nova Search Section
 Observation Committee, Montreal Centre

(Mrs. M. I.) Dorothy Yane
 5375 Cumberland Avenue,
 Montreal 29, Que.

Telephone: HU.8-8333

ROYAL ASTRONOMICAL SOCIETY OF CANADA
 Montreal Centre

NOVA SEARCH REPORT

Observer G. GAHERTY Area No.
 Address Month NOVEMBER 19 60 ..
 Time Used U.T. ..
 Telephone No. Power of Binoculars

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mag.																

Date	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
AND Time AVR										3						
AND Mag. AVR										6 5						

In recording time of observation, please use 24-hour system, with 0 hours at midnight, and indicate whether Eastern Standard or Daylight Time.

This report form is to be used for negative reports only. Please mail report to the chairman promptly at the end of each month. If you note anything unusual in your area, PLEASE PHONE CHAIRMAN IMMEDIATELY.

Chairman, Nova Search Section
 Observation Committee, Montreal Centre

(Mrs. M. I.) Dorothy Yane
 5375 Cumberland Avenue,
 Montreal 29, Que.

Telephone: HU.8-8333

Occultations Visible at Montreal

November 1960

	Date M+L	ZC NO	Mag.	Phenom.	Age (Moon)	Time M+L	¹ P.A.
	5	741	5.7	R	16.7	22.10.6	301
	6	878	5.5	R	17.6	21.32.5	229
	8	1040	6.2	R	18.8	03.17.0	301
	8	1141	5.6	R	19.7	23.34.5	237
	12	1486	4.6	R	23.0	05.48.8	345
M	21	2715	6.5	D	2.9	17.02.5	49
M	21	2718	6.7	D	2.9	17.33.5	65
W	23	3029	6.9	D	4.5	17.21.5	15
Th	24	3186	6.7	D	6.0	18.22.7	101
F	25	3333	6.8	D	7.1	20.27.2	31
Sa	26	3472	7.0	D	8.0	18.54.2	33
Su	27	55	6.4	D	9.1	19.53.7	74
Mo	28	202	7.0	D	10.2	23.52.0	92
Tu	29	303	6.6	D	11.0	18.25.5	98
X Tu	29	308	6.7	D	11.1	19.48.0	18
X Ta	29	322	5.7	D	11.2	22.59.2	73
X W	30	327	4.5	D	11.2	00.14.7	47

JUL - 4 REC'D

ROYAL ASTRONOMICAL SOCIETY OF CANADA
MONTREAL CENTRE

June 30th. 1961

The following is the summer schedule for the Saturday night meetings as agreed upon at the meeting of the Observations Committee of Monday June 12th. 1961.

June 17	C. Good	and	R. Venor
June 24	E. Bridgen	and	T. Morris
July 1	F. De Kinder		
July 8	K. Brasch	and	V. Williams
July 15	G. Gaherty	and	G. Wedge
July 22	C. Papacosmas	and	I. Williamson
July 29	F. De Kinder	and	C. Good
Aug. 5	B. W awlings	and	V. Williams

The schedule for August and September will be determined later.

F.J. De Kinder
Director of Observations

Mr. G. Gaherty

VF 5-1903
3.755 me.

Royal Astronomical Society of Canada
Montreal Centre
NEARLY-TOTAL LUNAR ECLIPSE OF AUGUST 25-26, 1961

TIMETABLE

EDT.	E.S.T.		
9:00	8:00		Check in to Zackon
	8:30		Colour change observation
	8:35	Moon enters umbra	Time 1st contact
	8:45		Colour change
	9:00		Colour change
	9:15		Colour change
	9:30		Colour change
	9:40		Begin lunar meteor observations
	9:45		Colour change
	10:00		Colour change
	10:08	Mid-eclipse	Colour change
	10:20		Note areas not eclipsed
			Note lunar features visible
			Estimate magnitude of eclipsed moon
	10:15		Colour change
	10:30		Colour change
	10:40		End of lunar meteor observations
	10:45		Colour change
	11:00		Colour change
	11:15		Colour change
	11:30		Colour change
	11:42	Moon leaves umbra	Time last contact
	11:45		Colour change

Report 1st & last cont.'s by phone

10:28 ~~lapse~~ started 10:28

Passing clouds

10:30

10:35

~~+2:20~~ ✓ ~~TYCHO~~ ~~FRANKS~~
+4:05 TYCHO (mid cont)

- 1 sec for every min

10:40

1:06 ① GRIMALDI

~~10:45~~

2:27 ② GRIMALDI

+4 dome 40% overcast

No cov.

10:45

3:44

HELL

10:50

0:25

MARIUS (REINER?)

10:55

+2

Light cirrus clouds over moon

- 1/2 sec for every min
- 1/2 sec " " "

11:00

+3:25

① COPERNICUS

11:05

~~3:34~~
3:55

② COPERNICUS

+03 dome 20% cloud
disk clear

11:10

+0:09

PROM. HERACLIDES

11:15

0:02

PROM. LAPLACE

1:47

E END STRAIGHT RANGE

3

Sky largely clear

3:05

W END STRAIGHT RANGE

4:12

E in TENERIFFE MTS

11:20

0:47

① PLATO

0:41

② PLATO

11:25

0:17

PLINIUS or ~~PROM. ACHERUSIA~~

2:06

DAWES

3:12

EUDOXUS (called Aristoteles)

04:47

ARISTATELES

11:30

00:00

TARANTIVS (called Posidonius)

1:32

POSITONIUS

3:08

PRACLUS

3:34

LICK (SE edge Mare Crisium)

4

More clouds approaching moon

11:35

0:44

object on Lick photo (center ~~44~~ +.650, +.462)

4

light cirrus over moon

WILKINS

11:40

0:04

MESSAGA

1:44

CLICK! Some penumbral shading still on

disk.

11:45

11:45

Lapse end.

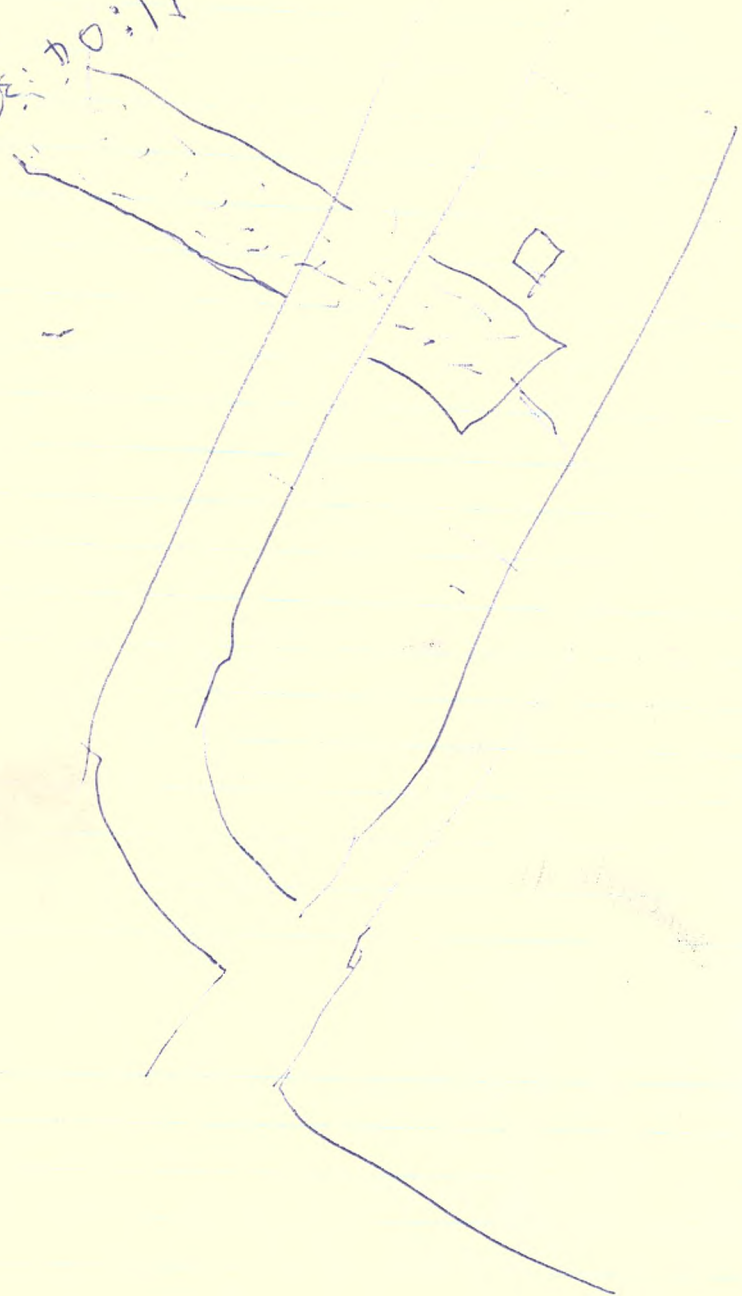
11:43

CASH
CONT

23	45	00
23	41	44.3

BRASCH: COP
F.MILE

11:04:30





NATIONAL RESEARCH COUNCIL
CANADA

RADIO AND ELECTRICAL
ENGINEERING DIVISION

CABLE ADDRESS "RESEARCH"

IN YOUR REPLY PLEASE QUOTE

FILE NO.

MAR - 7 RECD

OTTAWA 2.

March 6, 1962

Geoffrey Gaherty, Jr.
636 Sydenham Avenue
Montreal 6, Quebec

Dear Mr. Gaherty,

This is to acknowledge receipt of one package of Auroral Reports which we received today.

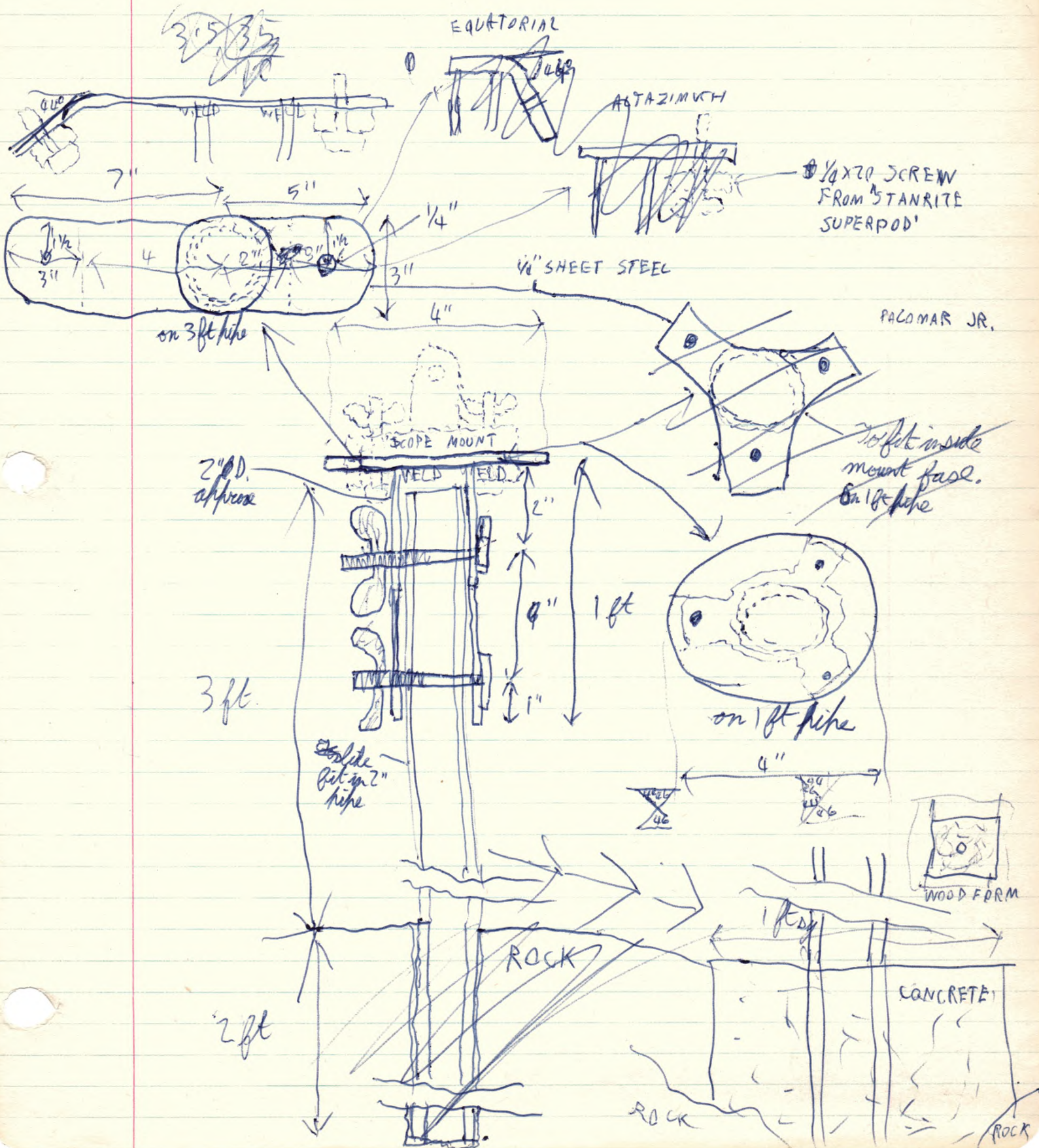
Thank you for your continued assistance in this project.

Yours sincerely,

D. Gibson

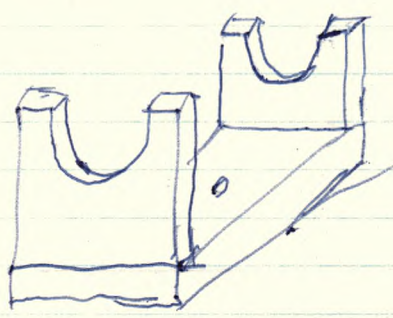
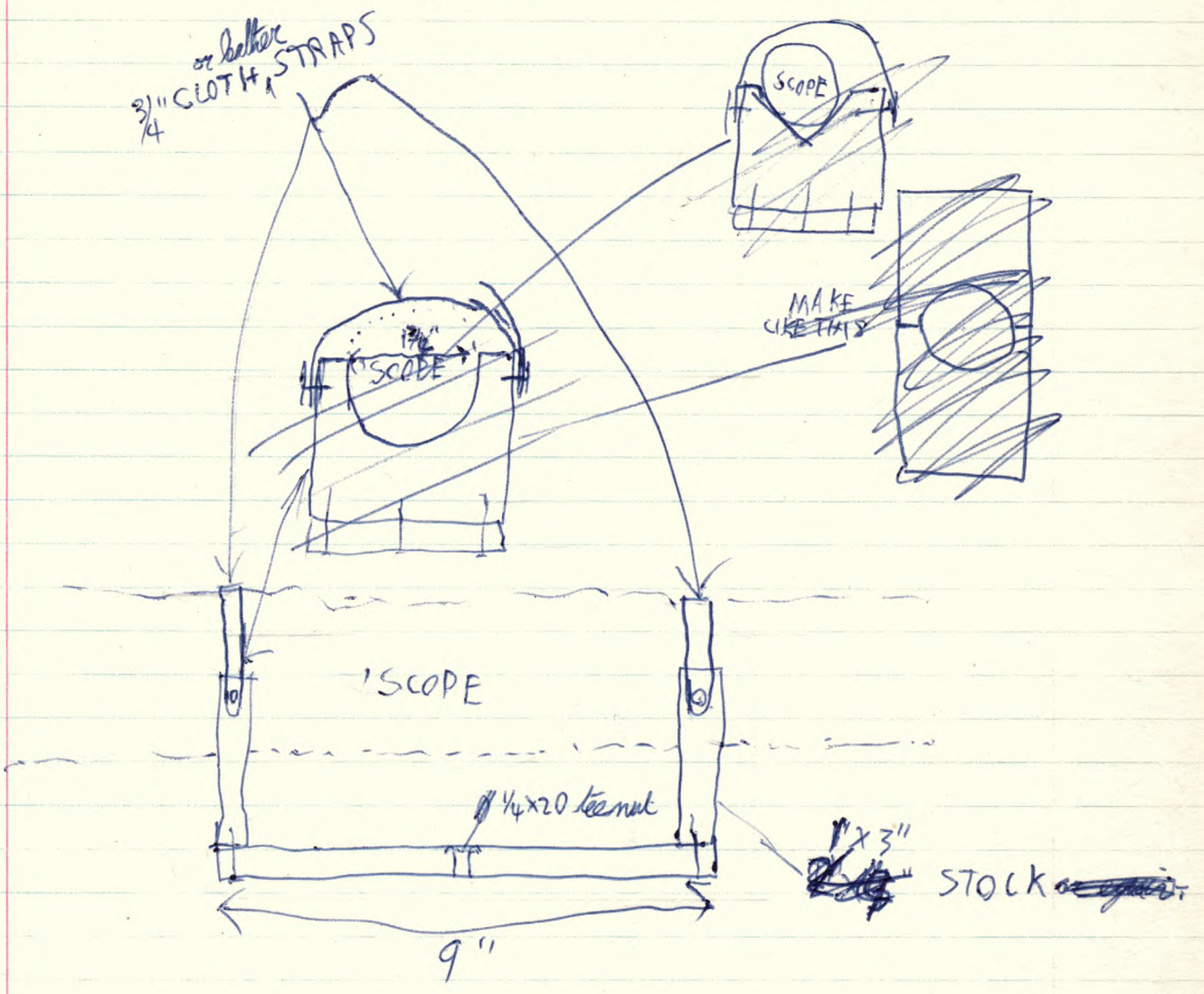
Miss D. Gibson
for Dr. P. M. Millman,
Auroral Centre

Fixed Post Mount for Ubin



4/8/57

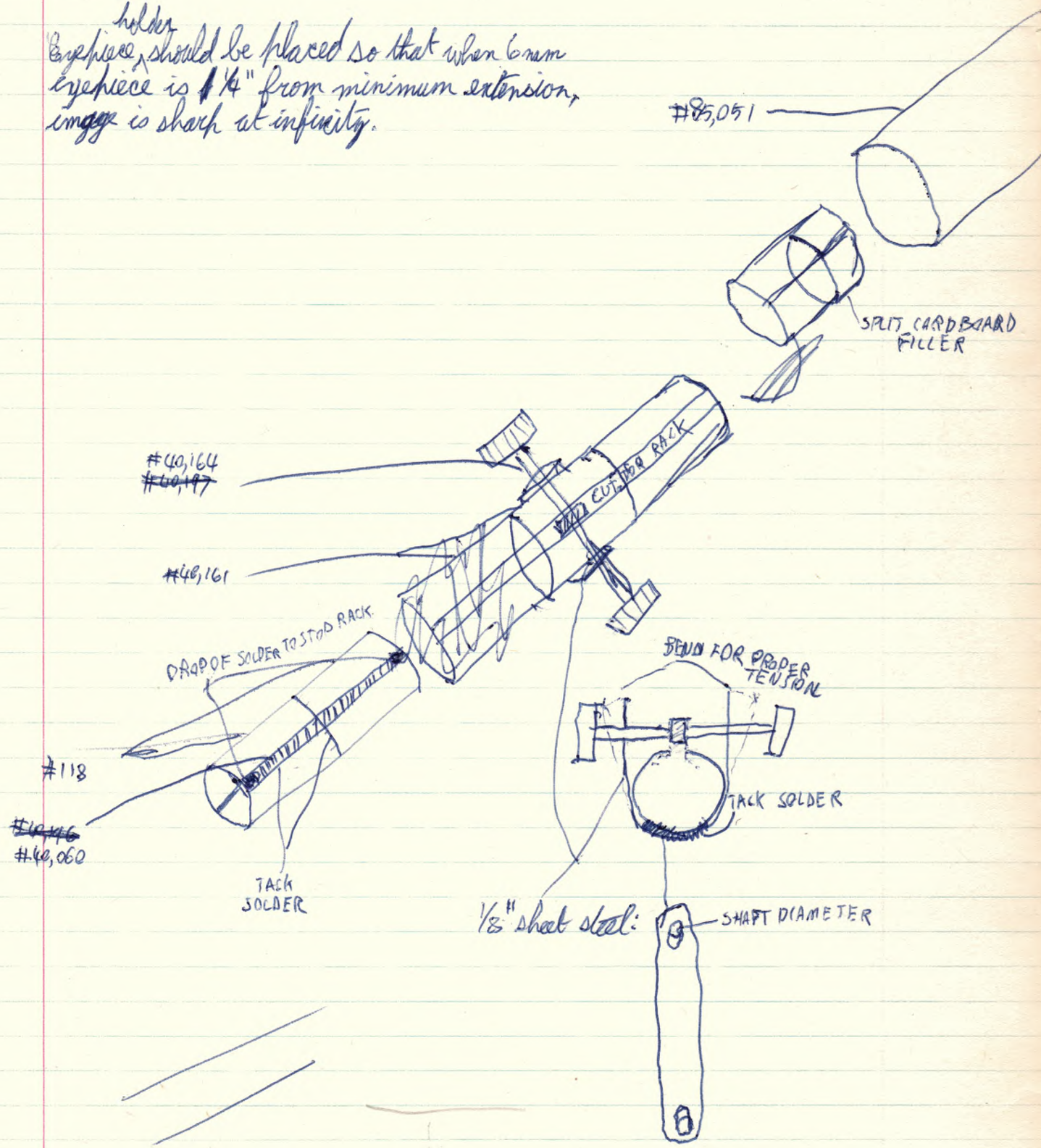
MOUNT FOR 32 mm scope to fit on photo tripod



4/8/57

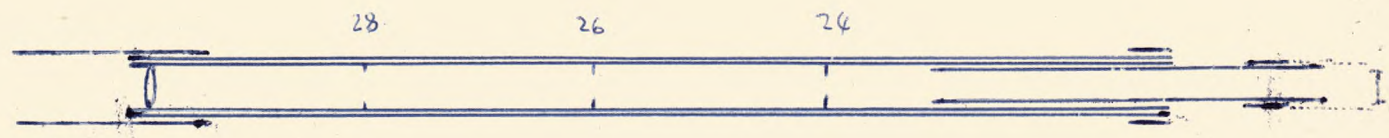
EYEPiece HOLDER FOR 42mm SCOPE

holder
Eyepiece should be placed so that when 6mm eyepiece is $\frac{1}{4}$ " from minimum extension, image is sharp at infinity.



32 mm ASTRONOMICAL, F.L. = 31"
TUBING LAYOUT

6/8/57



~~1/4~~ 1/5 full size

6/8/57

DO 32 mm (1.2598") X

FO 788 mm (31.024")

M 28 (w. 28 mm);

63 (w. 12.5 mm)

[13-76]

EP. 1.14 mm (w. 28 mm)

~~2.56 mm (w. 12.5 mm)~~

51 mm (w. 12.5 mm)

FE 28 mm Hellner

12.5 mm Huggens

f/25 X

f/number of object

1° 26' (w. 28 mm) X

True field angle

32' (w. 12.5 mm)

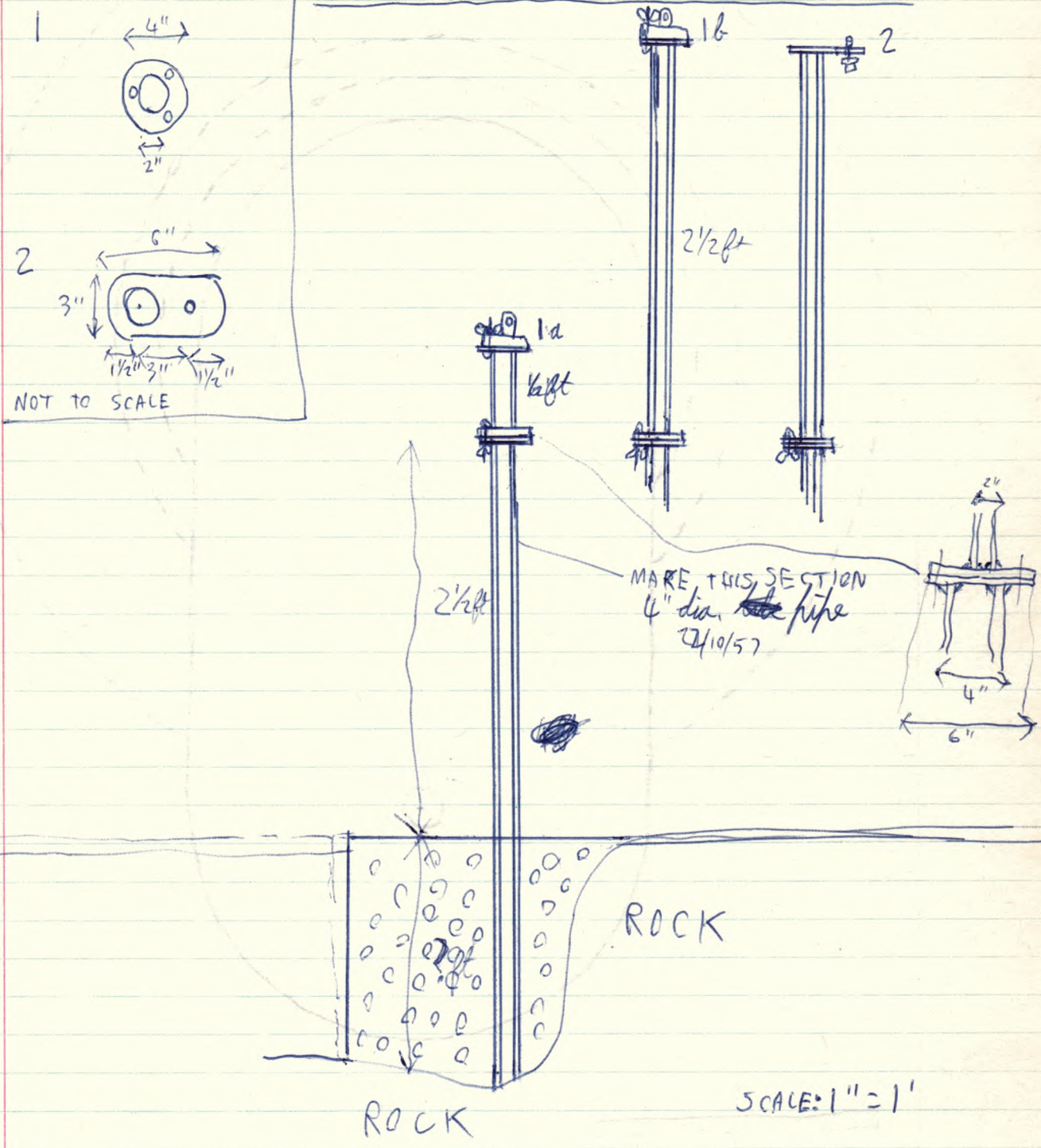
Apparent field

Eye Relief

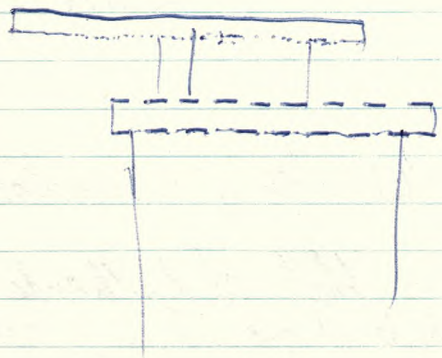
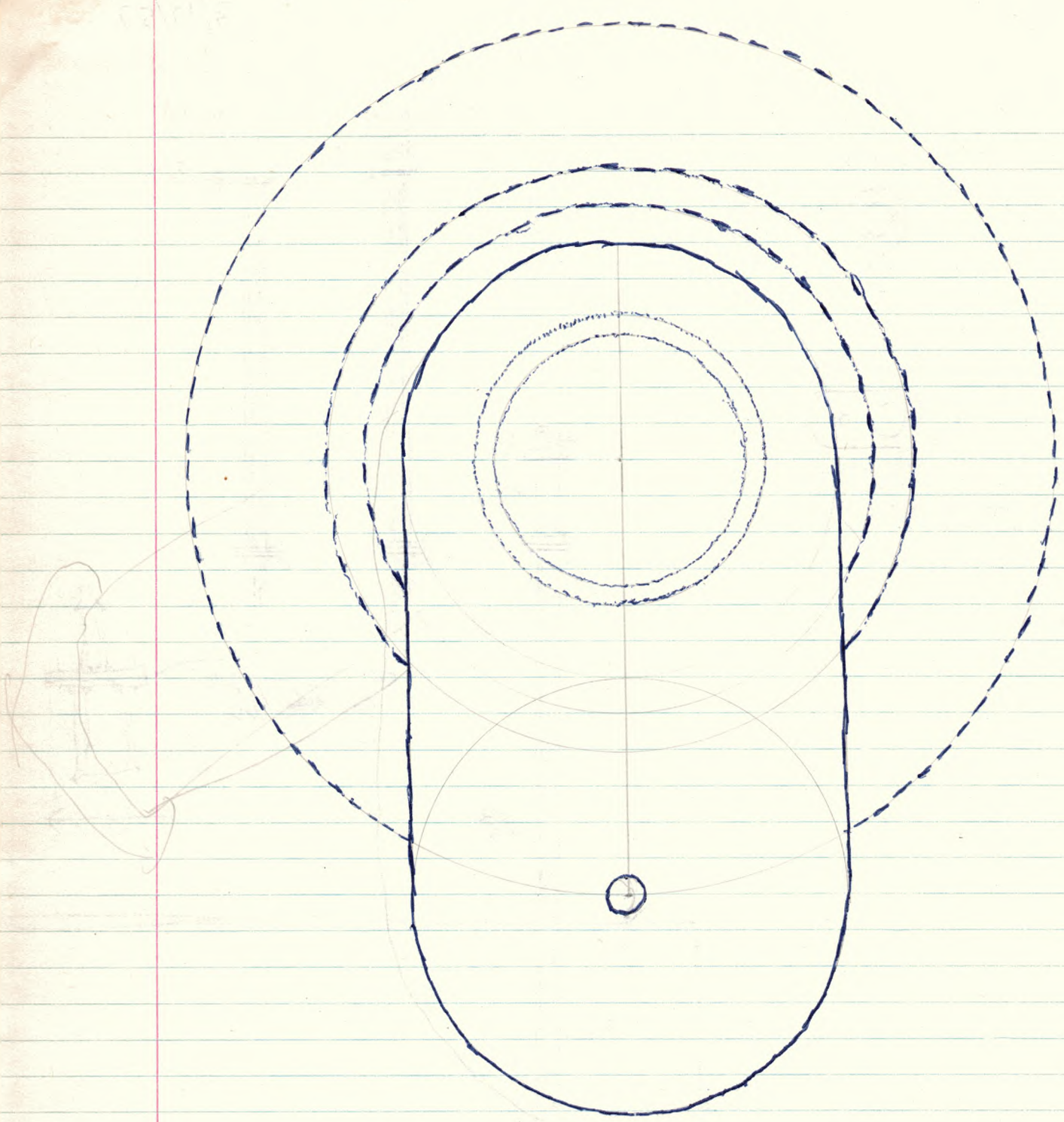
Magnification	mm	X
	56	14
	40	20
	31	25
	28	28
	25	32
	20	39
	18	44
	12.5	63
	10	79
	9	88
	7	113
	6	131
	5	158
	4	197

3/10/57

PERMANENT POST MOUNT FOR WEIR

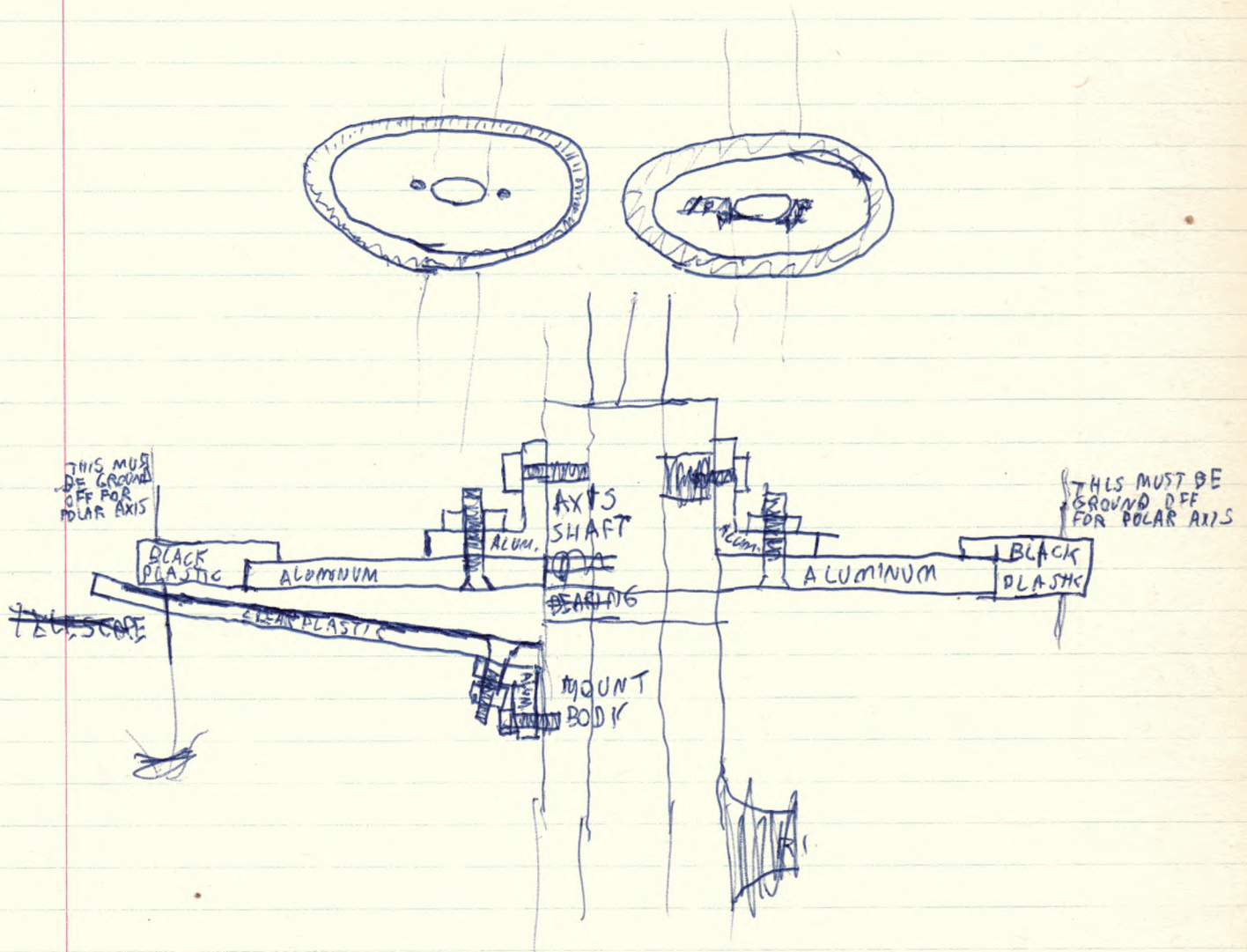


- 28/10/57 All end plates 1/4" thick
- 1 2 1/2 ft + (depth of rock crevasse) of 4" O.D. pipe with 6" D. circular plate welded to one end.
 - 2 2 ft of 4" O.D. pipe with 6" D. circ. plates at both ends
 - 1 1/2 ft of 2" O.D. pipe with 6" D. circ. plate at one end, 4" D. weir plate at other end.
 - 2 1/2 ft of 2" O.D. pipe with 6" D. circ. plate at one end, type 2 plate at other.
 - ~~1/2 ft of 4" O.D. pipe with 6" D. circ. plates at both ends.~~
- OVER

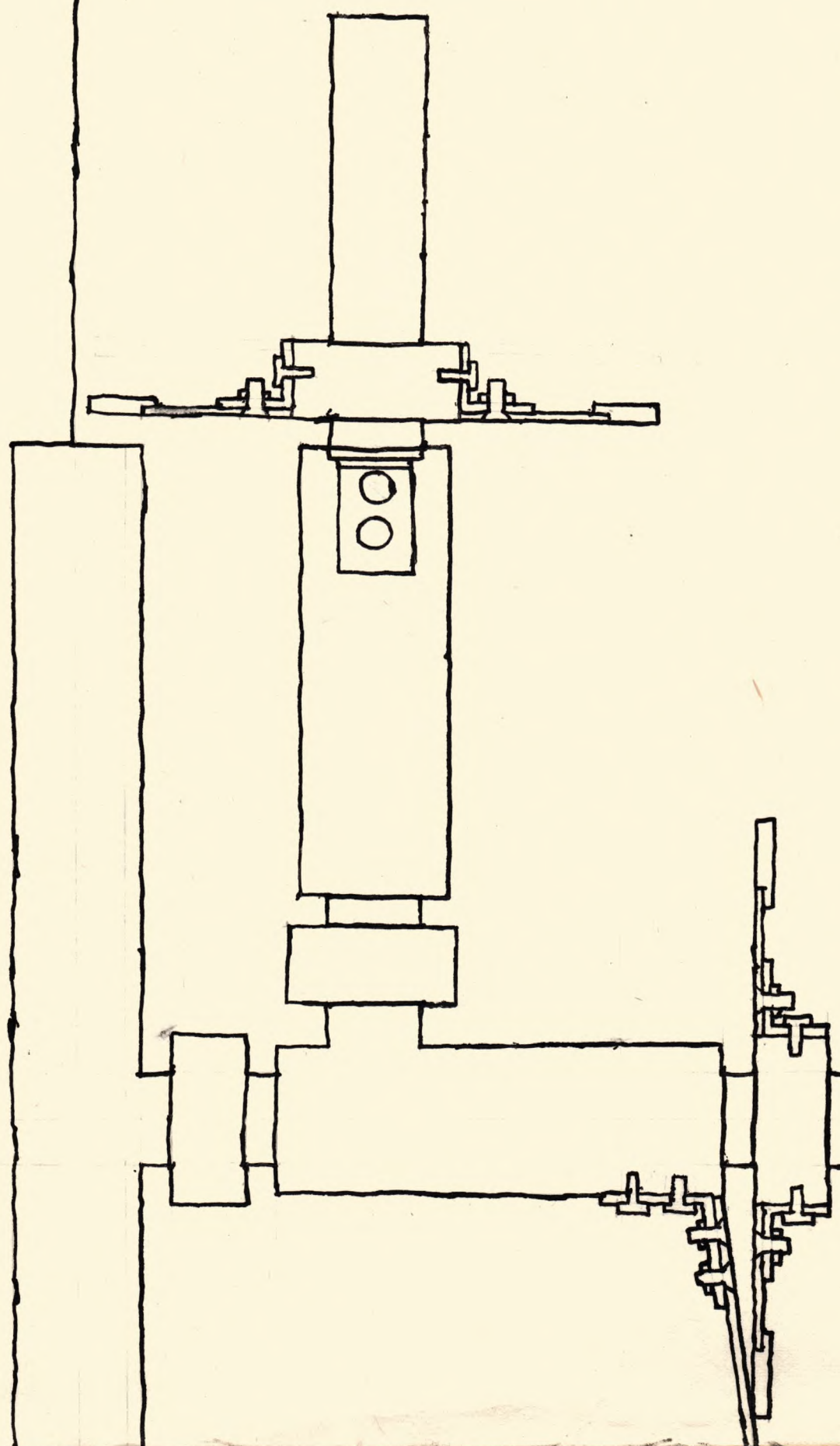


3/10/57

SETTING CIRCLES FOR PALOMAR, JR. MOUNT



SETTING CIRCLES FOR
PALOMAR, JR. EQUATORIAL
MOUNT — 3/10/57 — G.G.G.



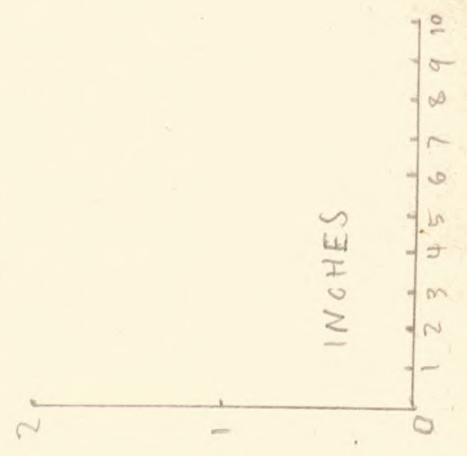
42mm OBJECTIVE CELL

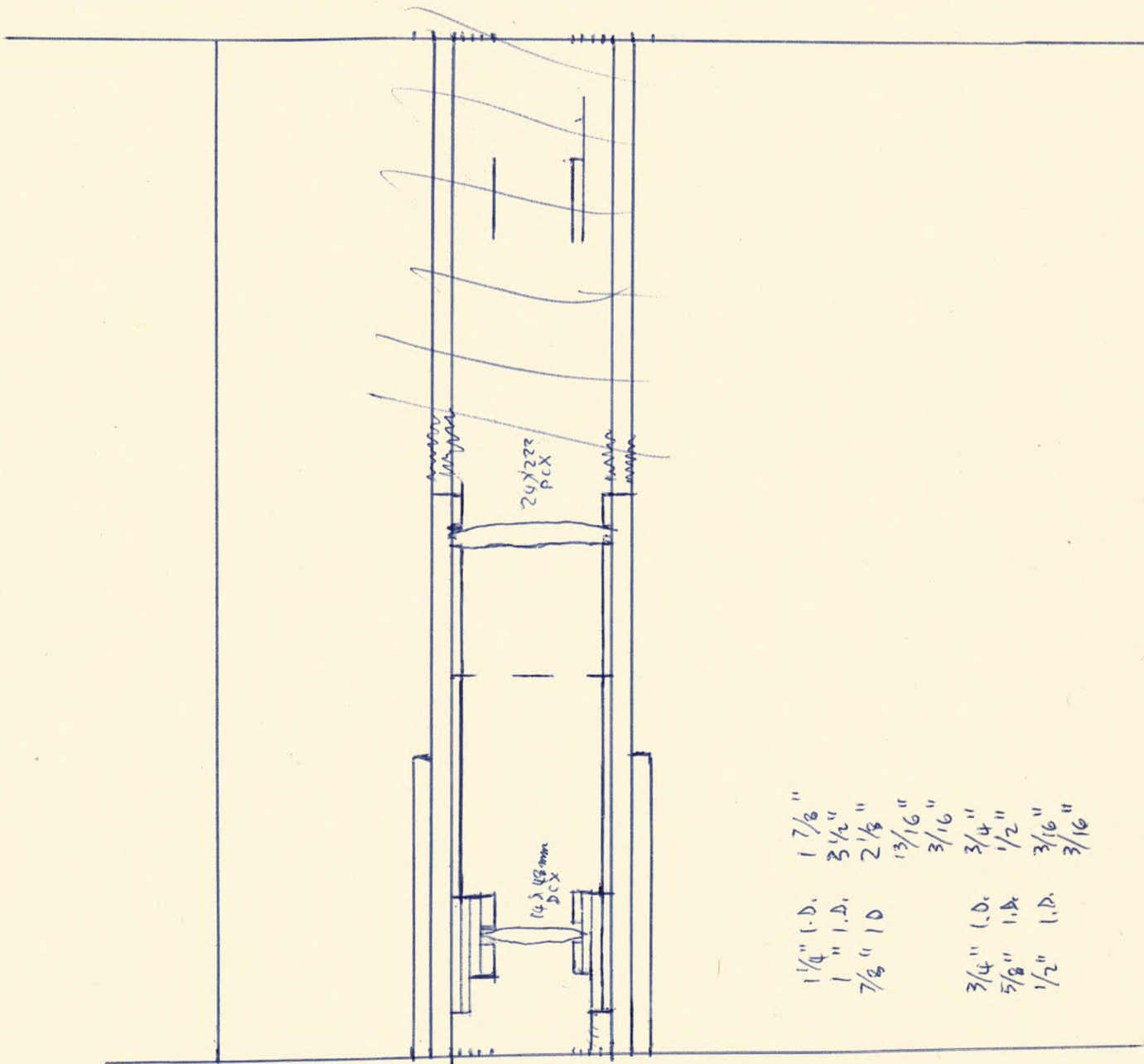
~~10/31/~~
31/10/57



40mm OPTICAL LAYOUT

31/10/57





$1\frac{1}{4}$ " I.D.	$1\frac{7}{8}$ "
1" I.D.	$3\frac{1}{2}$ "
$\frac{7}{8}$ " I.D.	$2\frac{1}{8}$ "
	$13/16$ "
	$3/16$ "
$3/4$ " I.D.	$3/4$ "
$5/8$ " I.D.	$1/2$ "
$1/2$ " I.D.	$3/16$ "
	$3/16$ "

22/11/57

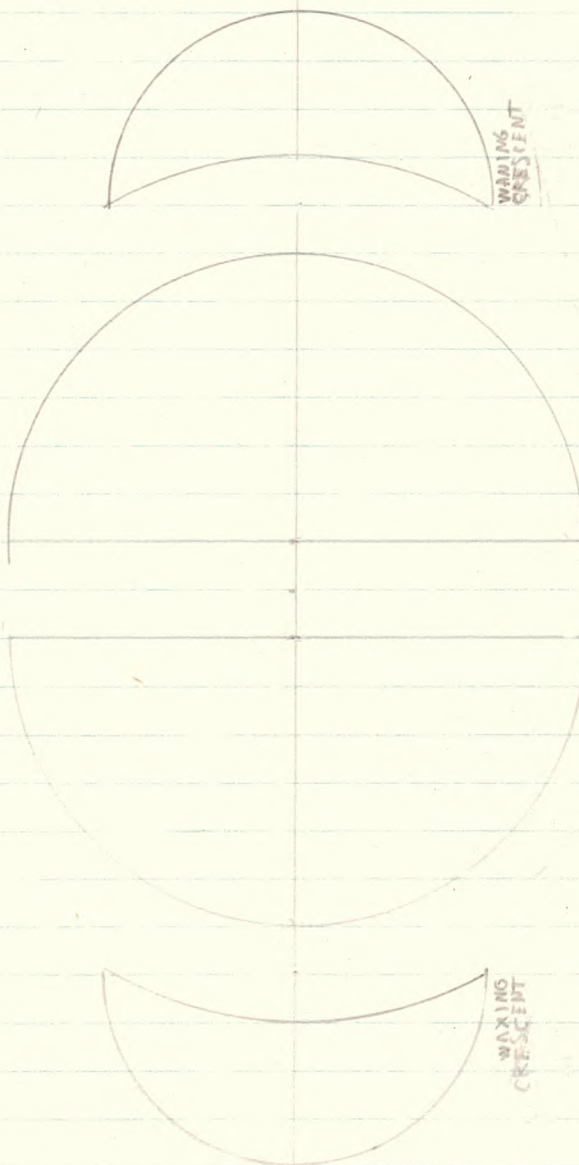
LUNAR WALL DISPLAY

OBSERVATORY

LICK 36" REFRACTOR
AUGUST 20, 1938

J.H. MOORE & J.F. CHAPPELL
24 1/2 days past new.

S



WAXING
CRESCENT

EAST
DIRECTION



WEST
DIRECTION

WAXING
CRESCENT



185

N

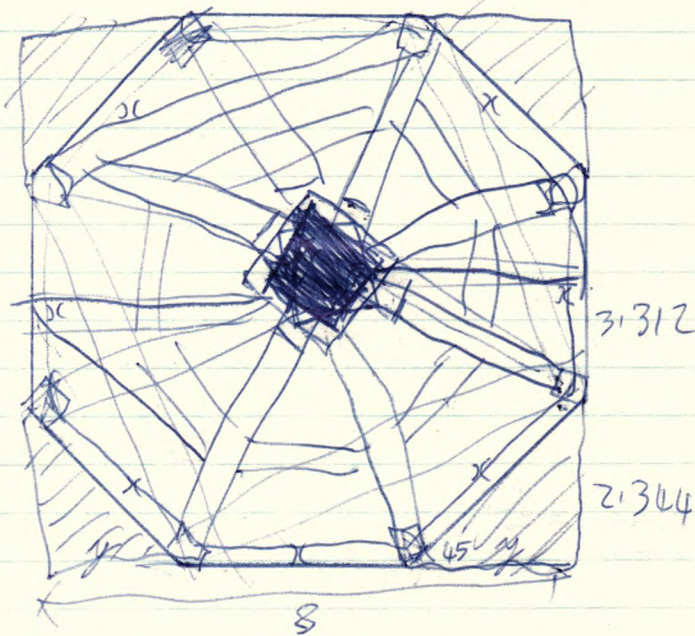
25/11/57



4 1" L $\frac{1}{4}$ -20 F. H. BOLTS
4 $\frac{1}{4}$ -20 NUTS
4 $\frac{1}{2}$ " D. $\frac{1}{4}$ -20 WASHERS
4 ~~X~~ $\frac{1}{4}$ -20 WING NUTS

WEIR OBSERVING PLATFORM

13/12/57



$$\begin{array}{r} 2.344 \\ \underline{12} \\ 4.688 \\ 2344 \\ \hline 28.128 \end{array}$$

$$\begin{aligned} x + 2y &= 8 & i \\ y^2 + y^2 &= x^2 & ii \\ 2y^2 &= x^2 & ii \\ x &= 8 - 2y & i \\ \text{(Subst in ii)} & & \\ 2y^2 &= (8 - 2y)^2 & iii \\ 2y^2 &= 64 - 32y + 4y^2 & \\ \ominus 2y^2 & - 32y + 64 = 0 & \\ y^2 & - 16y + 32 = 0 & \\ y &= \frac{16 \pm \sqrt{256 - 128}}{2} & \\ &= \frac{16 \pm \sqrt{128}}{2} & = \frac{16 \pm 8\sqrt{2}}{2} & \\ & & = 8 \pm 4\sqrt{2} & \end{aligned}$$

$$\begin{aligned} x &= 8 - 4.688 \\ &= 3.312 \end{aligned}$$

$$\begin{array}{r} 16 \\ \underline{16} \\ 96 \\ \underline{16} \\ 256 \end{array} \qquad \begin{array}{r} 8.000 \\ \underline{4.688} \\ 3.312 \end{array}$$

$$\begin{array}{r} 32 \\ \underline{4} \\ 128 \end{array} \qquad \begin{array}{r} 1.414 \\ \underline{4} \\ 5.656 \\ \underline{8} \\ 8.000 \end{array}$$

$$\begin{array}{r} 21 \quad 28 \\ \underline{1128} \\ 21 \quad 28 \end{array} \qquad y = \begin{array}{r} 8.000 \\ \underline{5.656} \\ 2.344 \text{ ft} \end{array}$$

$$\begin{array}{r} 2 \sqrt{128} \\ \underline{2 \quad 64} \\ 2 \quad 32 \\ \underline{16} \end{array}$$

$$= 8 \pm 4\sqrt{2} \qquad 8 \pm 4 \times 1.414 =$$

3

4 1/4

6

8

10

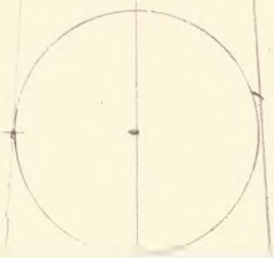
12 1/2

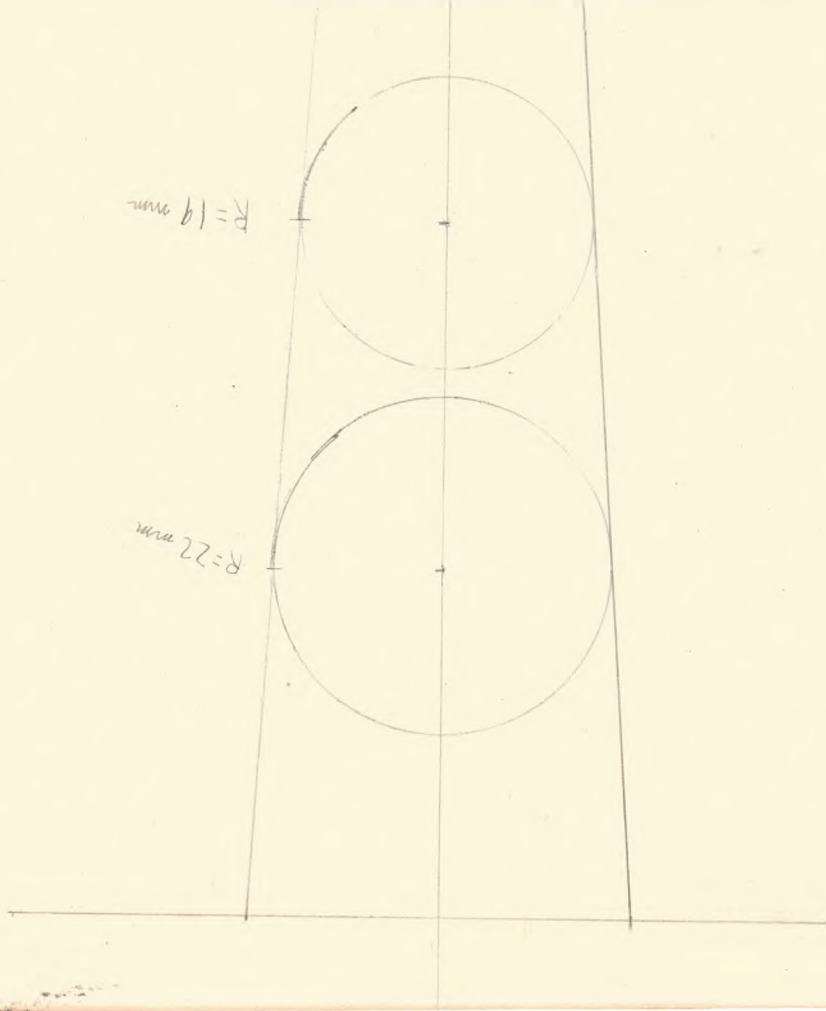
24/12/57

1" = 5"

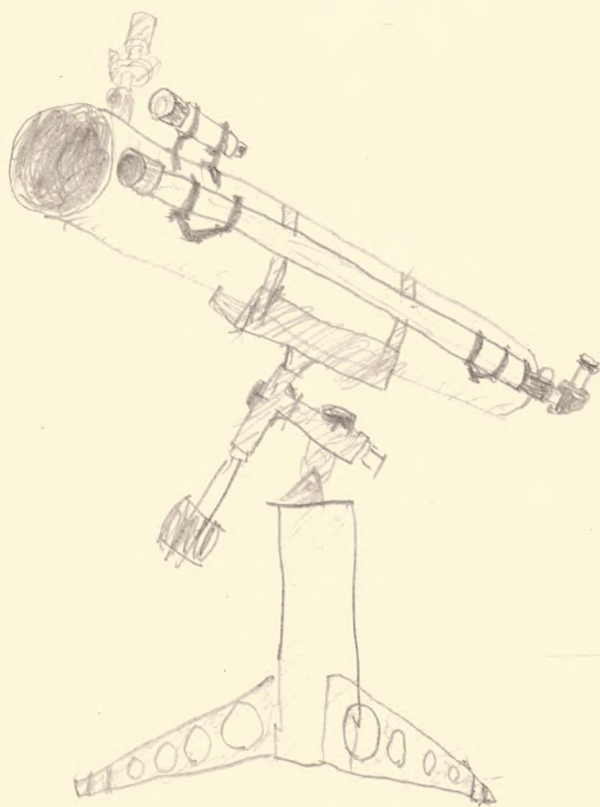
STOPS FOR 2"

16 mm

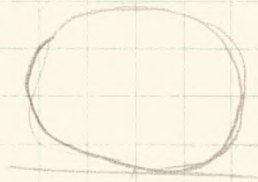
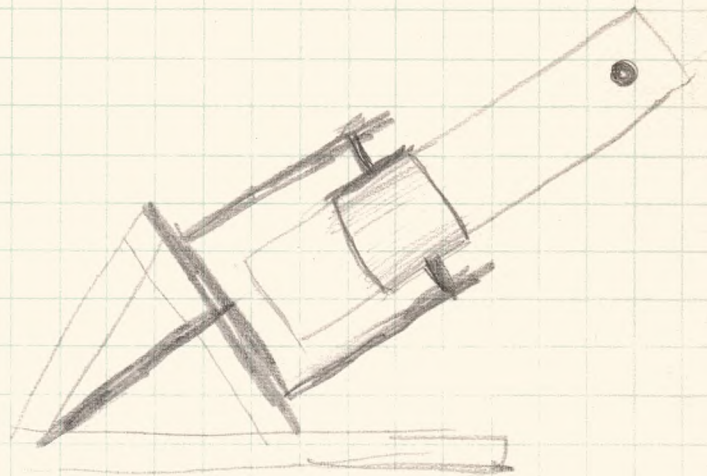




4 1/2" REFLECTOR
LOOKING EAST
(DECLINATION ABOUT +60°)



J. C. ...
MAY 29, 1957



$$C = \pi d$$

$$C_1 = \frac{11}{7} \times \frac{9}{2}$$

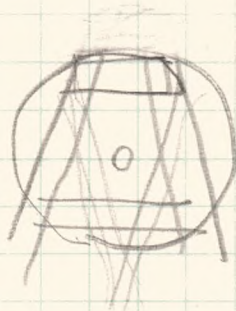
$$= \frac{99}{14}$$

$$= 7.1$$

$$C_2 = \frac{11}{7} \times \frac{12}{4}$$

$$= \frac{187}{28}$$

$$= 6.7$$

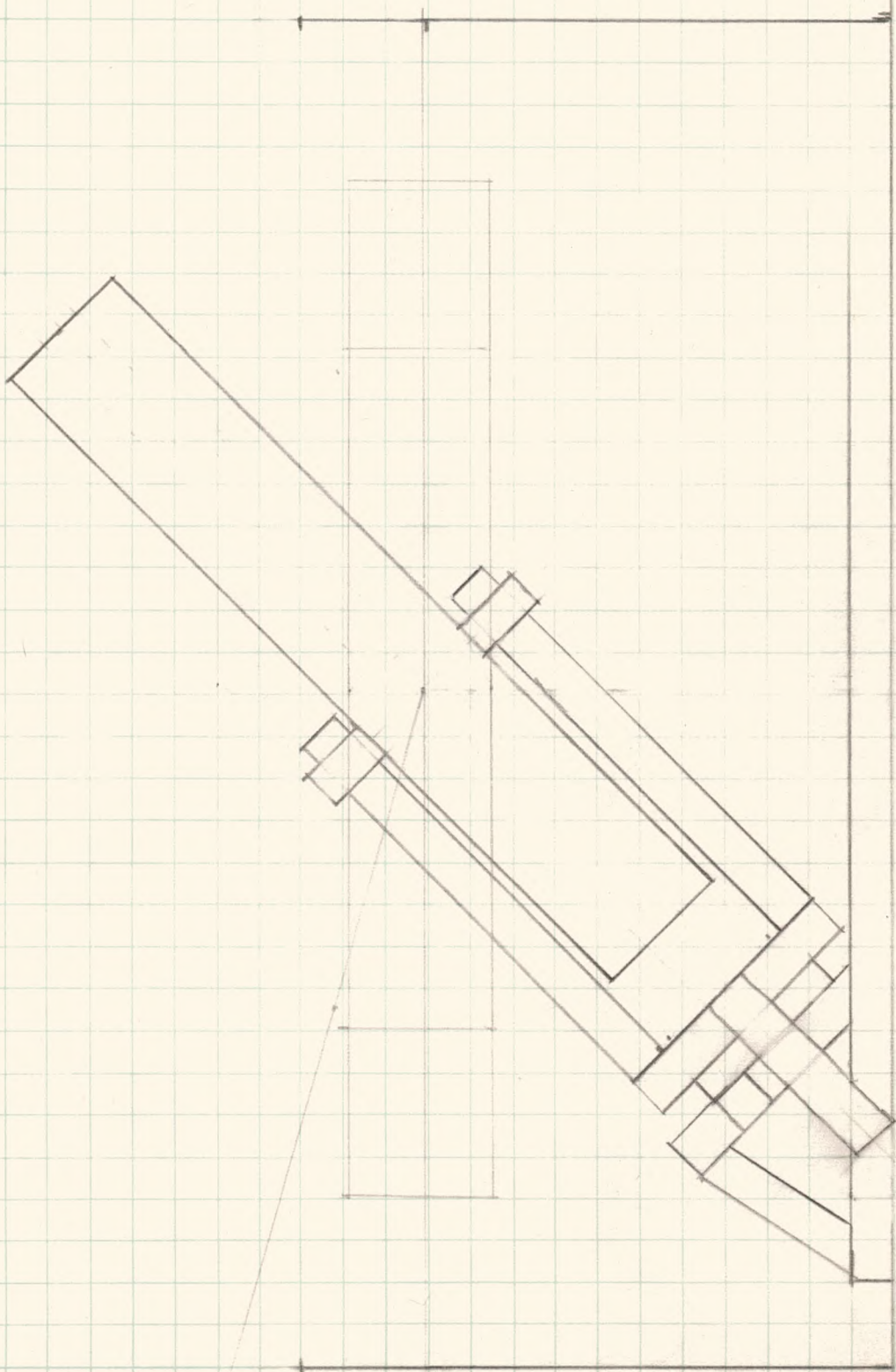


COAST
 Counterweight ?
 Mirror cleaning kit 2.35

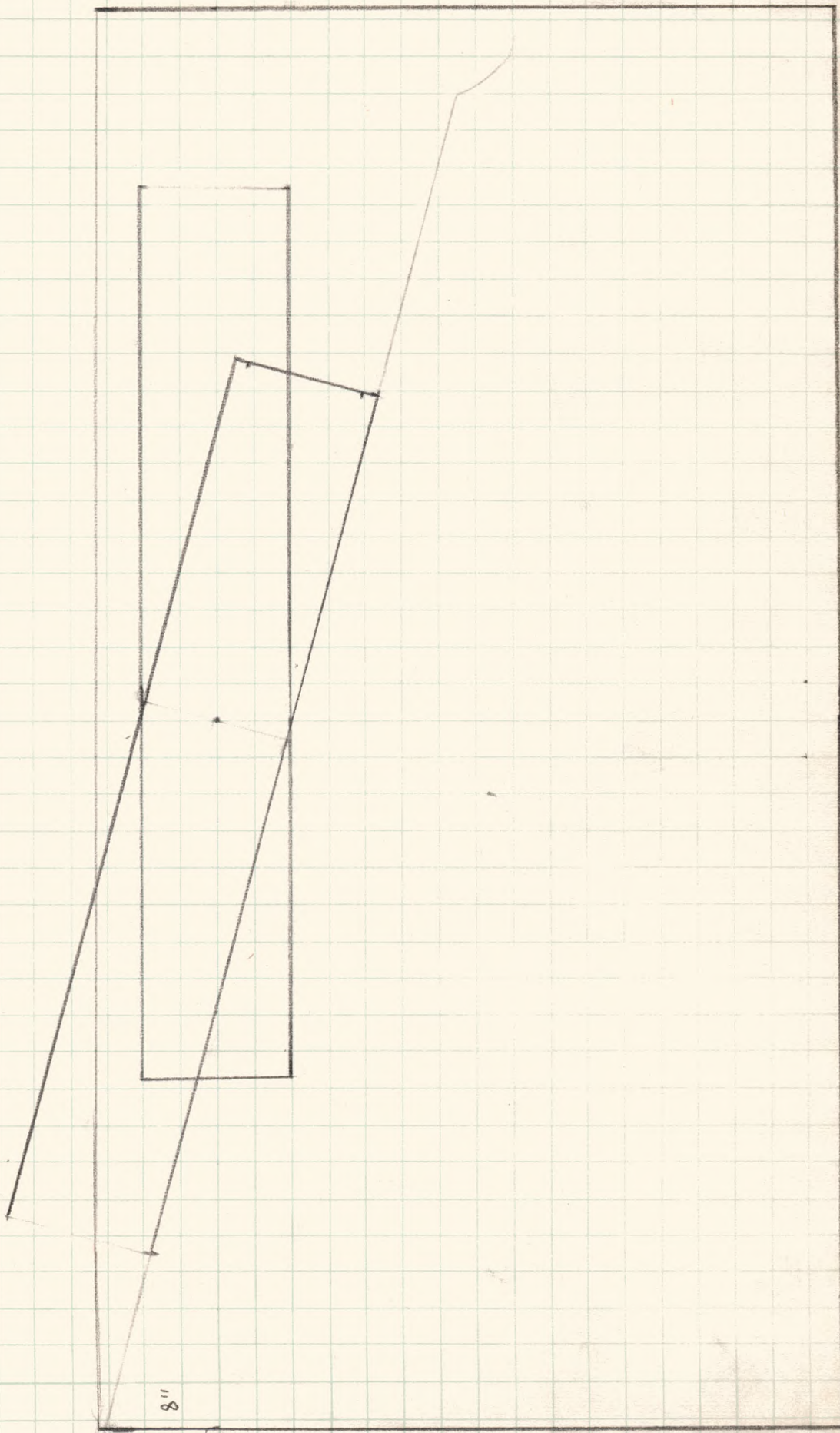
$$\begin{array}{r} 7.1 \\ 6.7 \\ \hline 0.4 \end{array}$$

$$\begin{array}{r} 85 \\ 16 \\ \hline 510 \\ 85 \\ \hline 1360 \end{array}$$

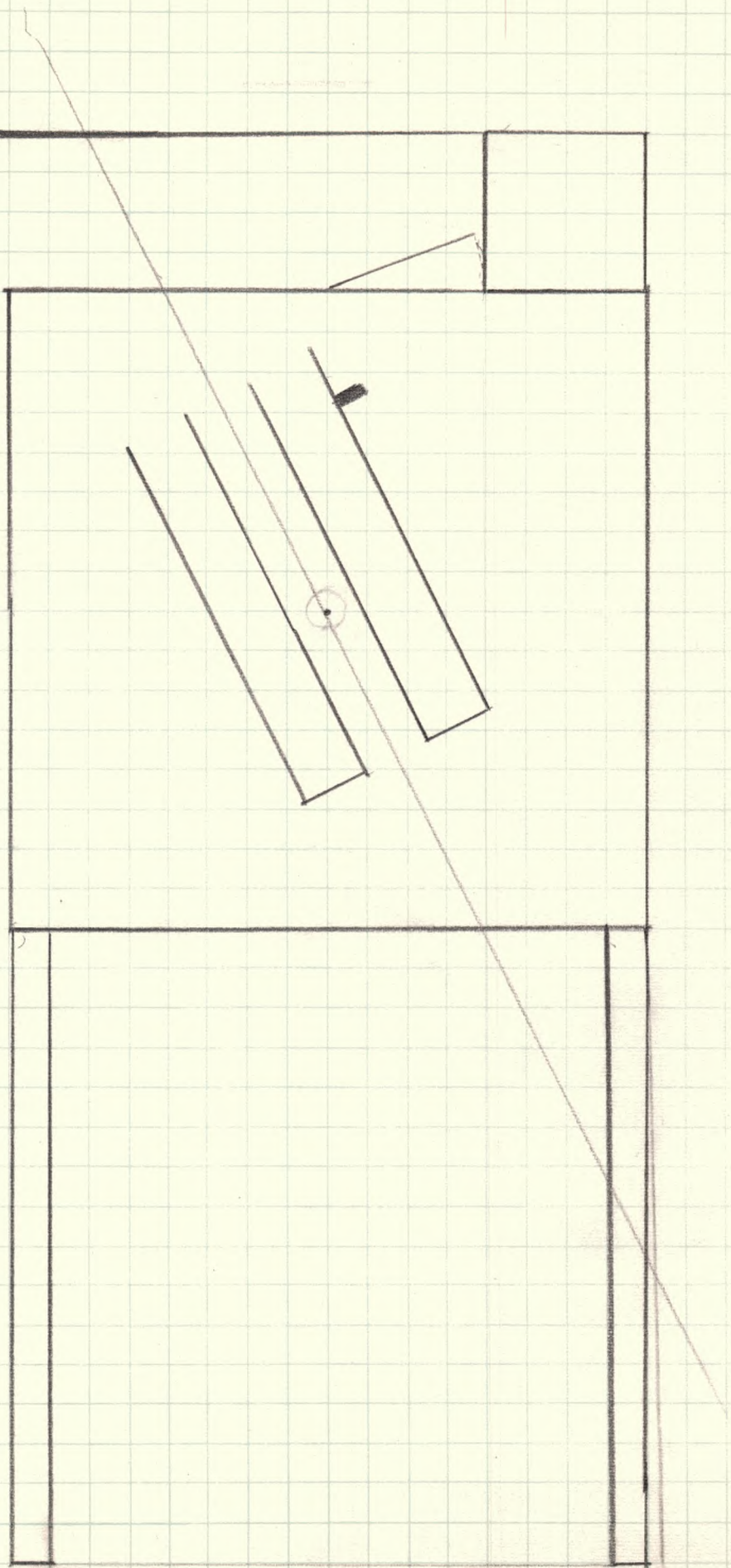
$$\begin{array}{r} 25.4 \\ 56 \\ \hline 1524 \\ 1270 \\ \hline 1422.4 \\ 1400 \text{ mm} \end{array}$$



24/3/59



24/3/59



Association of Lunar and Planetary Observers
1203 North Alameda Street,
Las Cruces, New Mexico.
1/2 yr. \$1.75; 1 yr. \$3.00; 2 yr. \$5.00

Sky Publishing Corporation,
Harvard College Observatory,
~~27 Garden St.~~
Cambridge 38, Mass.
1 yr. \$6.00; 2 yr. \$11.00; 3 yr. \$16.00

Mr. Fred Lunn,
5652, Sherbrooke St. W., Apt. 15,
N. J. C.
HU. 8-8105.

MECHANIX ILLUSTRATED: Amateur Telescope Maker's Page.

- Oct. 53 Planetary Observation
Apr. 54 Space Time Space Men (A.A.V. 5.0.)
May 54 6" Reflector ~~Mount~~
June 54 The Solar Eclipse
Sept. 54 6" Reflector + Shity Jr. Planetarium
Oct. 54 Edmund Sextant to Altazimuth Mount for Bdscope
Jan. 55 6" Reflector
May 55 Saturn
June 55 3 1/4" Refractor
July 55 Star Trails
Aug. 55 Temporary Mounting
Sept. 55 Silo Observatory
May 57 Telescope Alignment
Aug 57 Meteors and Comets (Edmund Satellite Scope)
Oct 57 Yodell Bank Radio Telescope
Nov 57 The Sun

6X30 monocular

Magnification: 6
Diameter of objective: 30 mm (1.1811 in)
Resolving power*: 4.2"
Faintest magnitude*: 9.4
Diameter of eye lens: 13 mm
Focusing: Individual

6X15 binoculars

Magnification: 6
Diameter of objective: 15 mm (.5906 in)
Resolving power*: 8.5"
Faintest magnitude*: 7.9
Diameter of eye lens:
Focusing: Individual

2.5X25 opera glasses (Chrome trim, dark blue leather)

Magnification: 2.5
Diameter of objective: 25 mm (.9842 in)
Resolving power: 5.1"
Faintest magnitude: 9
Diameter of eye lens: 13 mm
Focusing: Central

(2.5)X25 opera glasses (Brass trim, black leather)

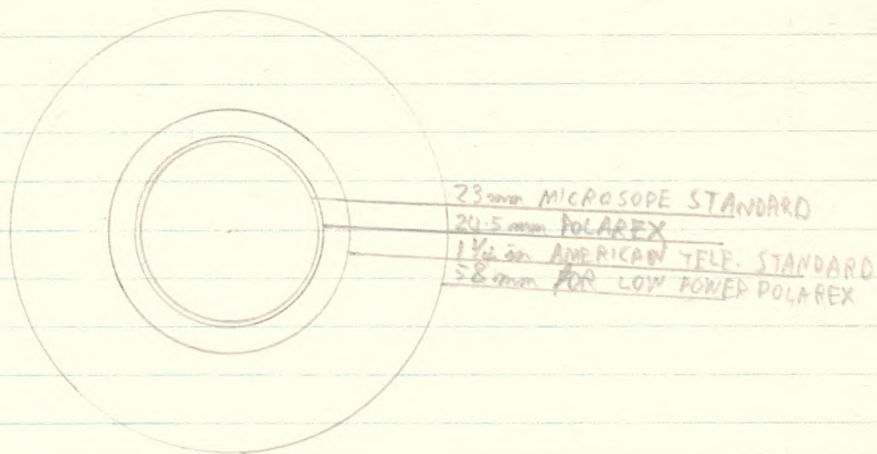
Magnification: (2.5)
Diameter of objective: 25 mm (.9842 in.)
Resolving power: 5.1"
Faintest magnitude: 9
Diameter of eye lens: 15 mm
Focusing: Central

(1.5)X15 opera glasses (Brass trim, light blue leather)

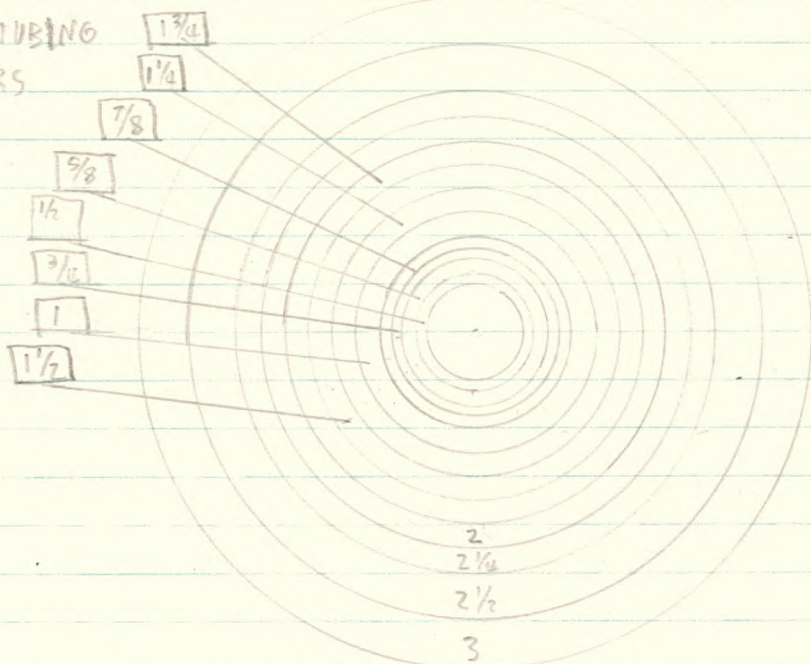
Magnification: (1.5)
Diameter of objective: 15 mm (.5906 in)
Resolving power: 8.5"
Faintest Magnitude: 7.9
Diameter of eye lens: 15 mm
Focusing: Central

* These are the theoretical limits ignoring prisms.

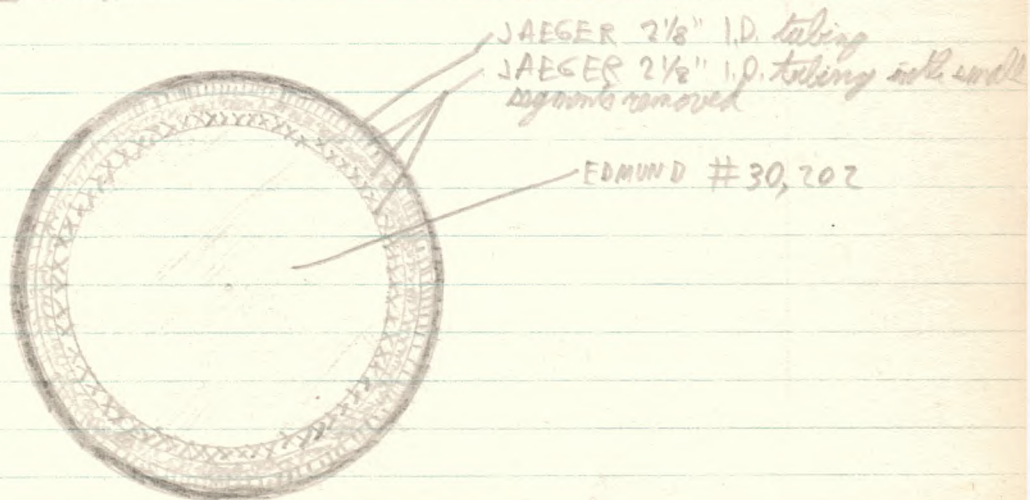
EYEPIECE
DIAMETERS



EDMUND TUBING
DIAMETERS



40mm lens cell cross-section



59 mm REFRACTOR

JAEGERS

54X1270 Achromatic Objective	\$12.50
Cell for above	3.50
4 ft 2 1/8" I.D. Alum. Tub. @ \$1.20/ft	4.80
Back and Pinion Eyepiece holder for above tub.	12.95
	<u>\$33.75</u>

EDMUND

#30,180 TELESCOPE MOUNT Telescope Mount	\$4.50
#50,121 6X Finder	8.00
	<u>\$12.50</u>

TOTAL plus tripod, eyepieces, diagonal etc. \$46.20

50 mm FINDER for 4 1/4" REFLECTOR

JAEGERS 54X254 Achromatic Objective	\$12.50
54X254 Achromatic Objective	3.50
Cell for above	1.20
1 ft 2 1/8" I.D. Alum. Tub. @ \$1.20/ft	1.20
Back and Pinion Eyepiece holder for above tub.	12.95
1/2" Eyepiece	18.50
1/4" Adapter for above	3.95
	<u>\$17.20</u>

5160

~~EDMUND~~

#70,079

#40,162

1 1/4" Eye Eyepiece	\$12.50
Finder Mount.	9.95
24" .001" thick Chromel Reticule Wire	.65
	10.60
	23.10

TOTAL \$63.10
40.30

42
0
252

QUANTITY	STOCK # & DESCRIPTION	DIAMETER	FOCAL LENGTH	PRICE EACH	TOTAL
1	#9051: BOOK: 'TELESCOPE FINDERS'			.15	.15
1	#60,039: 360° SETTING CIRCLE			1.25	1.25
1	# PLANO-CONVEX SIMPLE LENS	19 mm	28 mm	.40	.40
1	#3003: AMICI ROOF PRISM A=22, B=41, C=21 (mm)			2.50	2.50
1	#118: 2" x 1 1/4" I.D. BRASS TUBING			.40	.40
1	#5160: ERFLE EYE PIECE		1 1/4 in.	12.50	12.50
1	#30,171: 1/4" ADAPTER FOR ABOVE			3.95	3.95
					<u>27.15</u>
1	#70,079: Finder Mount			9.95	9.95
1	#40,162: .001" Chromel Reticule Wire			.65	.65
					<u>31.75</u>

40 mm REFRACTOR

~~42x104~~
 30,202 42x104 Achromatic Objective
 JAEGER'S 4 ft 2 1/8" I.D. Aluminum Tubing @ \$1.20/ft.
 JAEGER'S 2 1/8" O.D. Eyepiece Holder

4.00
~~4.80~~
 12.95
 21.75
~~15.95~~
~~38.70~~
~~31.35~~
 7.35

~~MT EYEPIECES~~

50 mm REFRACTOR

JAEGER'S { 54x1270 Achromatic Objective
 Cell for above
 4 ft 2 1/8" I.D. Alum. Tub. @ \$1.20/ft.
 2 1/8" O.D. Eyepiece Mount

12.50
 3.50
 4.80
 12.95
 33.75

75 mm RICHEST FIELD REFRACTOR

JAEGER'S { 78x381 Achromatic Objective
 Cell for above
 1 ft 3 1/4" I.D. Alum. Tub. @ \$1.75/ft.
 3 1/4" O.D. Eyepiece Mount

21.00
 6.50
 11.75
 12.95
 42.20

EDMUND { 5160 31 mm Erfle eyepiece
 30,171 1 1/4" adapter for above

12.50
 3.95
 58.65

~~75mm ASTROCAMERA~~

~~78x381 Achromatic Objective~~

OVER

✓30 mm. REFRACTOR

✓30,201	32 x 788 mm. Achromatic Objective	2.50
✓80,043	Telescoping Tubing	4.50
✓118	2" of 1 $\frac{1}{4}$ " I.D. Brass Tubing	.40
✓30,180	Telescope Mount	4.50
✓5223	28 mm. Kellner Eyepiece	7.95
✓30,203	12.5 mm. Ramsden Eyepiece	4.50
		<u>24.35</u>

40 mm. REFRACTOR

✓30,202	42 x 1041 mm. Achromatic Objective	4.00
85,051	48" of 2" O.D. Aluminum Tubing	3.00
✓80,043	Telescoping Tubing	4.50
118	4" of 1 $\frac{1}{4}$ " I.D. Brass Tubing	.80
40,161	3" of 1-3/8" O.D. Brass Tubing	.60
40,060	4" Rack	.75
40,164	1/4" Gear Shaft Pinion with Knobs	.75
✓30,180	Telescope Mount	4.50
✓5223	28 mm. Kellner Eyepiece	7.95
✓30,203	12.5 mm. Ramsden Eyepiece	4.50
		<u>31.35</u>

50 mm. REFRACTOR

30,187	50 x 1270 mm. Achromatic Objective	12.50
40,151	Cell for above	2.00
85,011	48" of 3" O.D. Aluminum Tubing	6.00
50,103	3" Eyepiece Mount	12.95
85,015	Palomar, Jr. Equatorial Refractor Mount	22.50
✓5223	28 mm. Kellner Eyepiece	7.95
✓30,203	12.5 mm. Ramsden Eyepiece	4.50
50,121	6X Finder Telescope	8.00
70,077	Prism Star Diagonal	12.00
		<u>88.40</u>

~~6" REFLECTOR~~

70,004	6" Mirror Kit	11.95
40,159	8 oz. of Barresite	2.30
50,117	6" Mirror Mount	7.50
85,014	60" of 7" O.D. Aluminum Tubing	15.00
50,077	Eyepiece Mount	9.95
50,025	Spider Diagonal Holder	4.25
30,205	Elliptical Mirror Diagonal to 1/8 wave	6.50
85,023	Equatorial Mount and Tripod	49.50

2" REFRACTOR

30,187	2" Achromatic Objective	12.50
40,151	Cell for above	2.00
85,011	48" of 3" O.D. Aluminum Tubing	6.00
50,103	3" Eyepiece Mount	12.95
30,180	Telescope Mount	4.50
5223	28 mm. Kellner Eyepiece	7.95
30,203	12.5 mm. Ramsden Eyepiece	4.50
		<u>50.40</u>

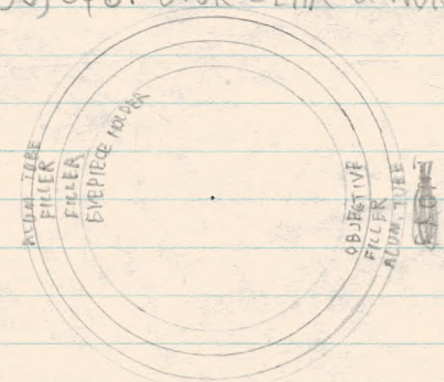
ELBOW ERECTOR

117	3" of 1 $\frac{1}{4}$ " O.D. Brass Tubing	.50
118	2" of 1 $\frac{1}{4}$ " I.D. Brass Tubing	.40
3003	Amici Corrected Roof Prism	2.50
		<u>3.40</u>

ADDITIONAL ACCESSORIES

70,077	Prism Star Diagonal	12.00
85,015	Palomar, Jr. Equatorial Refractor Mount	22.50
50,121	6X Finder Telescope	8.00
50,189	56mm. Kellner Eyepiece	6.00
30,064	12.5 mm. Huygens Eyepiece	8.00
30,065	10 & 20 mm. Huygens Combination Eyepiece	9.00
50,130	31 mm. Kellner Eyepiece	5.90
5160	31 mm. Erfle Eyepiece	18.50
30,171	1 $\frac{1}{4}$ " adapter for #5160 Eyepiece	3.95
30,200	Mounted Barlow Lens	8.00
50,023	Star Spectroscope for #30,064 Eyepiece	32.75
40,154	Planetary Glare Filter Set	1.00

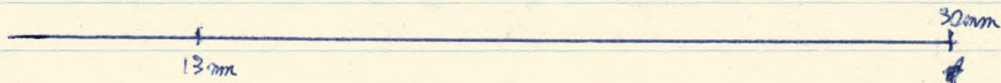
	STOCK # AND DESCRIPTION	DIA/METER	FOCAL LENGTH	PRICE EACH
	#9039: BOOK: 'RETICLES AND THEIR USES'			.45
	#9047: BOOK: 'COLLIMATING SYSTEMS'			.35
	#9052: BOOK: 'MAKE YOUR OWN SPECTROSCOPES AND SPECTROGRAPHS'			.50
E	1 #9208: BOOK: 'AMATEUR TELESCOPE MAKING, BOOK I'			5.00
B	1 #9051: BOOK: 'TELESCOPE FINDERS'			.15
D	1 #9203: BOOK: 'MAKING YOUR OWN TELESCOPE'			4.00
B	1 #9005: BOOK: 'MAKING A 6" REFLECTOR'			.15
	1 #30,187: ACHROMATIC OBJECTIVE	51 mm	1270 mm	2.50
	1 #40,151: CELL FOR ABOVE			2.00
	1 #85,011: 3" OD. ALUMINUM TUBING (F.O.B.)			6.00
	1 #50,103: EYEPiece MOUNT			2.95
L	1 #85,051: 2" OD. ALUMINUM TUBING (F.O.B.)			3.00
A	3 #118: EYEPiece TUBING			.40
	1 #40,161: EYEPiece TUBING			.60
K	1 #40,164: 1/2" DIA GEAR & SHAFT			0.75
I	1 #40,060: 4" 1/2" DIA RACK			0.75
	1 #3255: RIGHT ANGLE PRISM: A-38B-49, C-35			3.50
F	1 #9225: BOOK: 'DISCOVER THE STARS'			.75
	1 #118: EYEPiece TUBING			.75
G	1 #9274: BOOK: 'ASTRONOMY MADE SIMPLE'			.40
H	1 #30,066: HUYGENS EYEPiece	12.5 mm		2.00
	1 #70,077: PRISM STAR DIAGONAL			12.00
	1 #60,039: 360° SETTING CIRCLE			1.25
	1 #30,246: SPUR GEAR & WORM SET			3.00



30 ~~13~~
25.30

fl dia
 50 30 mm double-convex } separated cemented achromat. fl. w. convex out 125, plano. 140
 30 mm plano-concave }
 40 20 mm double-convex
 → 13 mm plano-convex cemented achromat fl. w. convex out 25 mm, plano. out 30

20 mm reticle in cell:



$$50 \overline{) 300} \begin{array}{r} 6 \end{array}$$

$$4 \overline{) 20} \begin{array}{r} 5 \end{array}$$

250 60 mm double-convex

Light trap.
 Setting circles
 Slow motions

6" reflector

70,004	Lens kit (70,004)	11.95
50,117	Mirror mount (50,117)	7.50
85,014	Aluminum tubing *	15.00
50,077	Eye piece mount	9.95
50,025	Spider mount	4.25
117	Eye piece tubing	.50
85,023	Mount + tripod *	49.50
	TOTAL	98.65

Absolute minimum:

70,004	Lens kit	11.95
50,117	Mirror mount	7.50
85,008	Cardboard tubing	4.00
50,077	Eye piece mount	9.95
60,049	Wagonal holder	1.25
117	Eye piece tubing	.50
85,037	altazimuth Mount	19.95
30,218	Pivot Studs	3.95
50,121	Finder GX	8.00
	TOTAL	67.05
	Labour	22.35
	Customs duty approx.	87.40
		83.53
		100.58
	labour.	25.15
		125.73

	Maximum	
√ 70,004	6" kit Mirror kit	11.95
√ 50,117	6" " mount	7.50
√ 85,014	Aluminum tubing	15.00
√ 50,077	eyepiece Mount	9.95
50,025	Spider diagonal holder	4.25
39,205	elliptical Mirror diagonal to 1/8 wave	6.50
117	eyepiece tubing	1.50
85,023	Equatorial mount + tripod	49.50
50,080	7x finder	9.95
50,075	finder mounts	3.95
40,152	cerium oxide 4 oz	1.50
40,158	barnesite 4 oz	1.60
	TOTAL	122.15
	Customs duty approx.	61.08
	TOTAL	183.23
	Labour	45.81
	TOTAL	229.04

70,004 ~~kit~~ 6" Mirror kit 11.95

4 1/4 in reflector

70,003	Lens kit	7.50
50,079	Micro mount	3.95
85,013	Aluminum tubing*	9.00
50,077	Eyepiece mount	9.95
60,035	Diagonal Holder	1.00
117	Eyepiece tubing	.50
	TOTAL	31.90
85,009	Mount + tripod*	18.45
	TOTAL	50.95

4 1/4" reflector, cont.

85,913	Aluminum tube*	9.00
50,079	Mirror Mount	3.95
50,077	Eye-piece Mount	9.95
60,935	Diagonal Holder	1.00
50,121	Finder	8.00
85,009	Tripod + mount	18.95
5223	1/8" ey Hellner	7.95
30,203	1/2" Ramsden	4.50
	TOTAL less mirror + diagonal	<u>63.30</u>

Cost of assembled scope	74.50
above total	<u>63.30</u>
Cost of mirror + diagonal	11.20

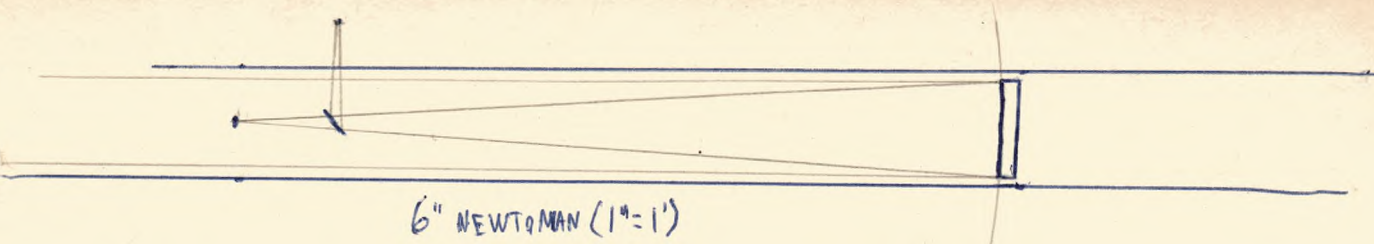
70,003	Cost of mirror mirror kit (incl. diagonal + 1" eye-piece)	7.50
117	Eye-piece tubing	.50

3" refractor

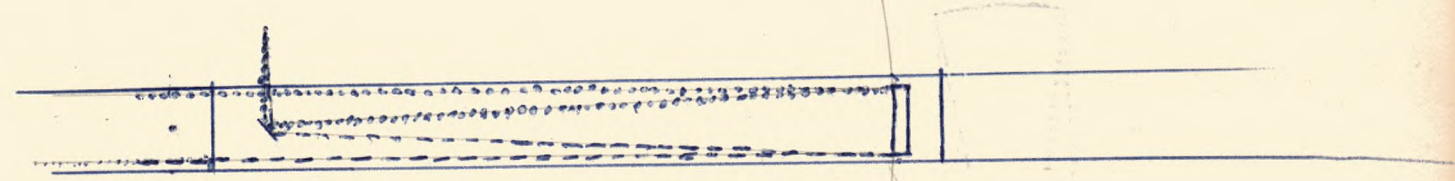
50,162	Achromatic lens objective in cell	42.95
85,011	Aluminum tubing	6.00
50,103	Eye piece mount	12.95
85,015	Mount + tripod	22.50
	TOTAL OF ESSENTIALS less eyepieces	<u>84.40</u>
50,121	Finder	8.00
70,077	Star diagonal diagonal	12.00
	TOTAL less eyepieces eyepieces	104.40
	Durios lens	8.00
		<u>112.40</u>

125.00
112.40
12.60
1/8" Kellner
9.95
1/2" Ramsden
4.50
<u>124.85</u>

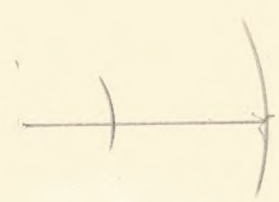
1/8" Kellner
1/2" Ramsden



6" NEWTONIAN (1"=1')



4 1/4" NEWTONIAN (1"=1')

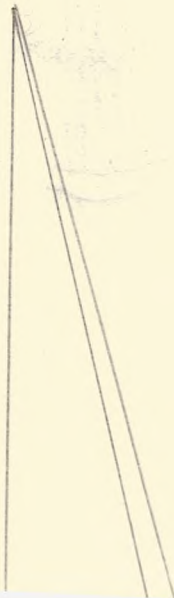


$$\frac{10000.00}{1} = 10^4$$

$$A = \frac{10^{3/5}}{1}$$

$$10^{-3/5} = A$$

$\therefore A = 1.2512$
 $\log A = -\frac{3}{5} = -0.6 = \overline{1.4}$
 $5 \log A = -3$
 $6 = 9 + 5 \log A$
 $M = 9 + 5 \log A$



$$\begin{array}{r} 1212002 \\ \hline 16 \end{array} \begin{array}{l} 7 \\ 12 \\ 3 \end{array}$$

$$\begin{array}{r} 16 \\ \hline 12 \\ 32 \\ \hline 26 \\ \hline 16 \\ \hline 10 \end{array}$$

200" H R L E (in mm = 184)



- 3 1/2 X Galilean:
- ✓1 31X152 fpcx
- ✓1 13X-45 dcr

EYEPIECE HOLDER	9.95
FINDER	8.00
28mm EYEPiece	7.95
12.5mm EYEPiece	4.50
BARLOW TUBING	1.50
STAR CHART	1.50
STAR BOOK	1.50
	<hr/>
	32.90

- ~~5X Galilean:~~
- ~~✓1 24X222 fpcx~~
- ~~✓1 13X-45 dcr~~

- 4X Galilean
- ✓1 37X393 fpcx
- ✓1 24X222 ~~top~~ fpcx
- ✓1 13X-45 dcr

	74.50
	<hr/>
	32.90
	<hr/>
	41.60

- 6X-9X Galilean:
- ✓1 31X152 fpcx
- ✓2 13X-45 dcr

- ~~17X Galilean:~~
- ~~✓1 37X393 fpcx~~
- ~~✓2 13X-45 dcr~~

- 8X Astronomical:
- ✓1 37X393 fpcx
- ✓1 24X222 fpcx
- ✓1 14X48 dcr

~~Eye~~ Draw tubes for 8X Astronomical:

- 9X Galilean:
- ✓1 13X-45 dcr

- 16X Astronomical:
- ✓2 14X48 dcr

- 17X ~~Galilean:~~
- ✓2 13X-45 dcr

56
40
31
28
25
20
18
12.5
10
9
7
6
5
4

28

$$\begin{array}{r}
 25.4005 \\
 \underline{45} \\
 1270025 \\
 \underline{1016020} \\
 11430225
 \end{array}$$

30

$$\begin{array}{r}
 6.72 \\
 17 \overline{) 114.30} \\
 \underline{102} \\
 123 \\
 \underline{119} \\
 40
 \end{array}$$

$$\begin{array}{r}
 85 \\
 \underline{34} \\
 119
 \end{array}$$

1/4"

3 3/4
50

$$\begin{array}{r}
 2 \quad 1 \\
 6 \overline{) 1270.00} \\
 \underline{211.66}
 \end{array}$$

$$\begin{array}{r}
 8 \overline{) 127.00} \\
 \underline{15.87}
 \end{array}$$

$$\frac{5}{4} \times \frac{10}{4}$$

$$\begin{array}{r}
 6 \overline{) 254.00} \\
 \underline{42.33}
 \end{array}$$

$$\begin{array}{r}
 210.1 \\
 3.75 \overline{) 78800.00} \\
 \underline{750} \\
 380 \\
 \underline{375} \\
 500 \\
 \underline{375} \\
 1250
 \end{array}$$

$$\begin{array}{r}
 8 \overline{) 25.40} \\
 \underline{3.17} \\
 375 \\
 \underline{35} \\
 1875
 \end{array}$$

$$\begin{array}{r}
 50 \overline{) 7880} \\
 \underline{15.76}
 \end{array}$$

- 7 13X-45 dex
- 3 14X48 dex
- 2 31X152 ~~hex~~ hex
- 2 24X272 hex
- 2 37X393 hex

To order:

- ~~6 13X-45 dex @ .15~~
- ~~1 14X48 dex @ .15~~
- ~~1 31X152 hex @ .15~~
- ~~2 24X272 hex @~~
- ~~1 37X393 hex @~~

To order

- 5 13X-45 dex @ .15
- 1 lens kit #2

.75
1.00

JAEGER'S	}	2 X 10" ACH. OBJ.	12.50
		CELL	3.50
		TUBE	1.20
		R+P	12.95
		1 1/2" E.	18.50
		ADAPTER	3.95
EDM. #70,079	MOUNT	9.95	
		62.55	

EDM. #39,204	1/4" R.	3.75
39,200	BARLOW	8.00
49,163	.0007" RETICLE WIRE	.65
		12.40

2" REFRACTOR

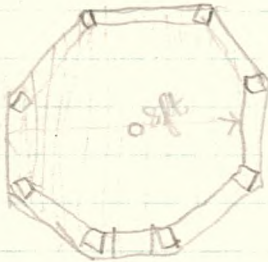
30,187	2" Achromatic Objective	12.50
40,151	Cell for above	2.00
85,011	48" of 3" O.D. Aluminum Tubing	6.00*
50,103	2 7/8" 2 7/8" O.D. Eyepiece Mount	12.95
5223	28mm Hellner Eyepiece	7.95
30,203	12.5mm Ramsden Eyepiece	4.50
30,180	Telescope Mount	4.50
	TOTAL	50.40
	Less Eyepieces and Mount	16.95
		33.45

+50% customs + shipping

+10% labour

50.40
25.20
75.60
7.56
83.16
85.00

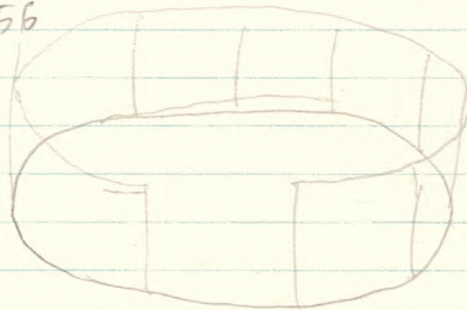
2" x 2"



- 2/128
- 2/64
- 2/32
- 2/16
- 2/8
- 2/4
- 2/2
- 1



$$\begin{array}{r} 16 \\ 16 \\ \hline 96 \\ 16 \\ \hline 256 \end{array}$$



$$y = \frac{16 \pm \sqrt{256 - 128}}{2}$$

$$= \frac{16 \pm \sqrt{128}}{2}$$

$$= \frac{16 \pm 8\sqrt{2}}{2}$$

$$= \frac{8 \pm 4\sqrt{2}}{1}$$

$$= 8$$

$$x^2 + x^2 = 4$$

$$2x^2 = 4$$

$$x^2 = 2$$

$$x = \sqrt{2}$$

$$2y^2 - 32y + 64 = 0 \quad x = 8$$

$$y^2 - 16y + 32 = 0 \quad (8 - 2y)^2 = 2y^2$$

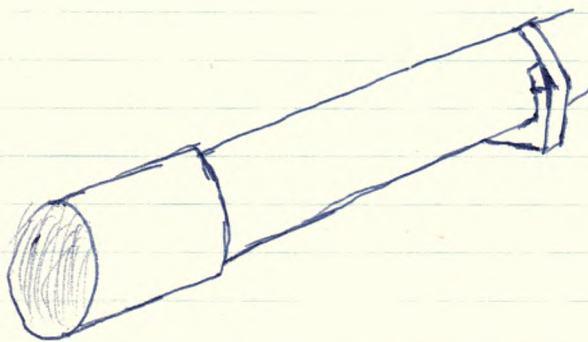
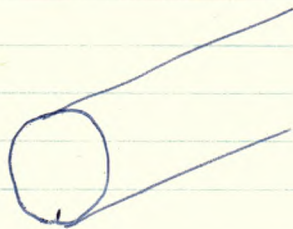
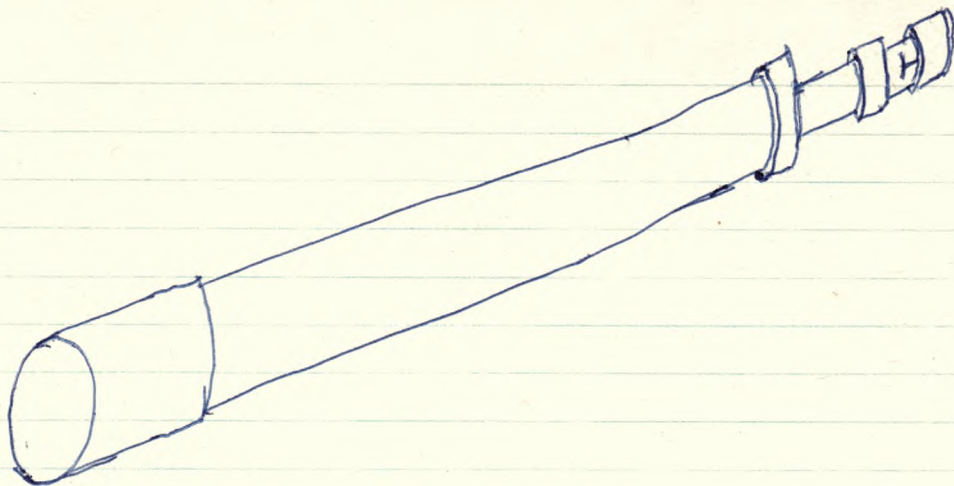
$$64 - 32y + 4y^2 = 2y^2$$

1 2 4 50.40
32 16 8

#

4" REFRACTOR

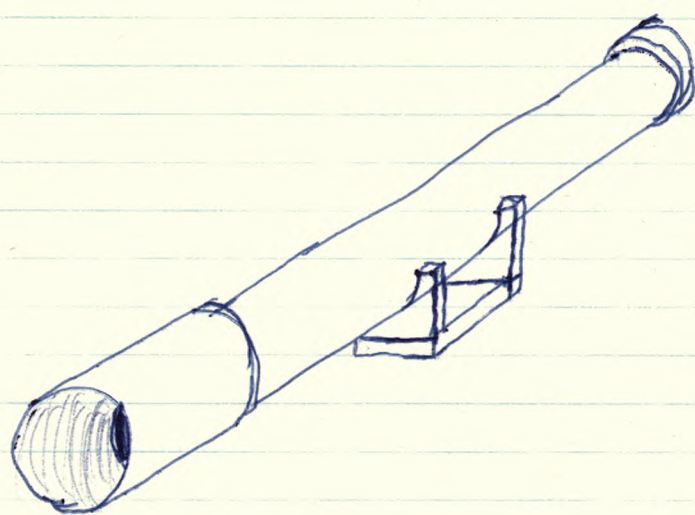
70,128	4" OBJ Objective in cell	80.95
85,012	Aluminum Tubing	8.75
50,108	Eyepiece Mount	<u>13.95</u>
		103.65
85,023	Topod and Mount	56.00
50,121	Finder	8.00
70,077	Star Diagonal	12.00
30,200	Barlow lens	8.00
5223	28mm Hellner	7.95
9227	Star Chart	1.50
9225	'Discover The Stars'	<u>1.75</u>
		195.85

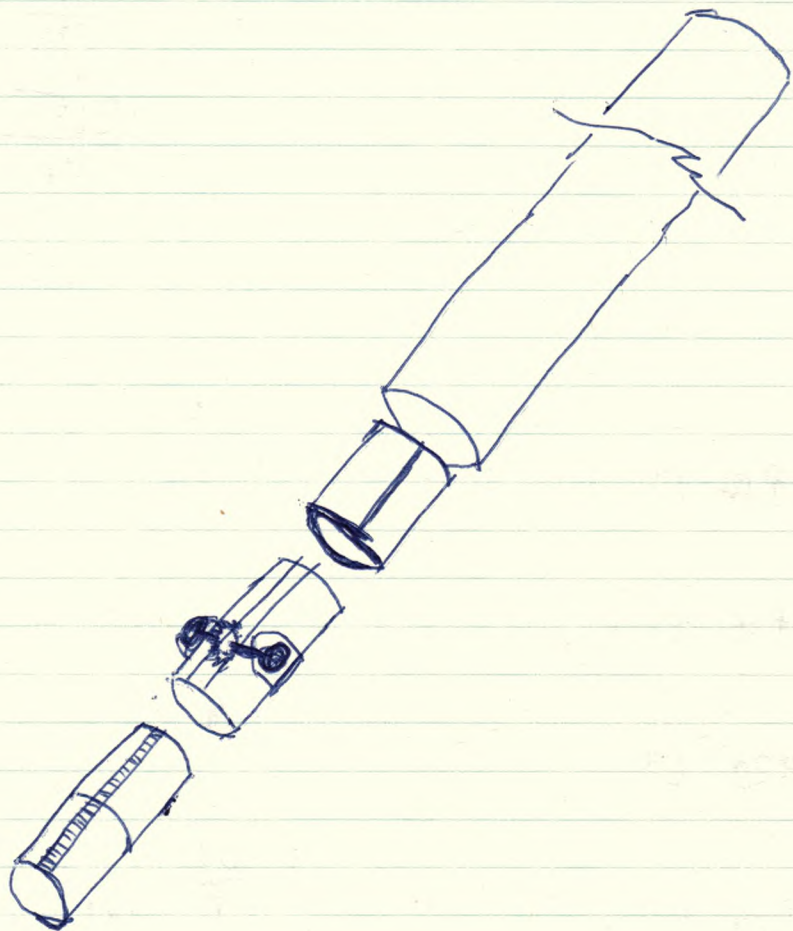


17	24
<u>17</u>	<u>24</u>
119	96
<u>17</u>	<u>48</u>
189	576

1/2

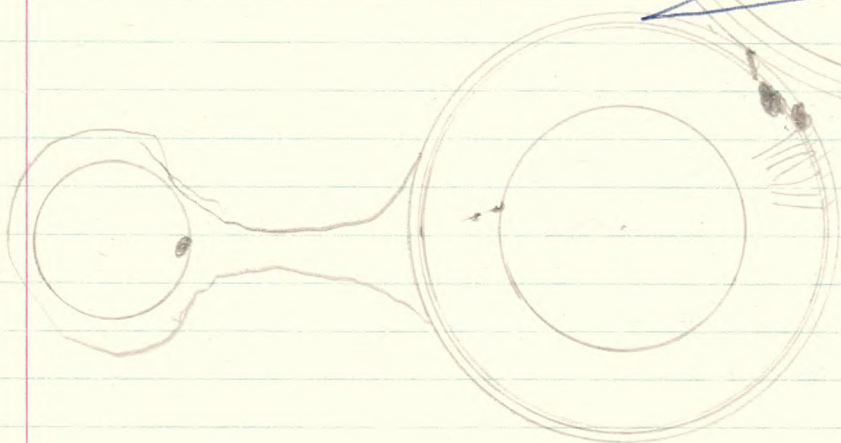
mbx





DO 110 mm (4 1/4")
 FO 1143 mm (45")
 M 41 (w. 28 mm)
 91 (w. 12.5 mm)
 191 (w. 6 mm)

EP
 FE 2



$$30 \times$$

$$1.5 \overline{) 450}$$

$$100$$

$$1.5 \overline{) 150} \quad 10 \times$$

$$6.5$$

$$10 \overline{) 65}$$

$$5-6$$

$$12 \overline{) 1680}$$

$$60$$

$$80$$

$$72$$

$$8$$

$$5 \frac{2}{3}$$

$$6 \frac{1}{2}$$

$$\frac{63}{18}$$

$$45$$

SKY PUBLISHING CORPORATION

1 yr. 'Sky and Telescope' (start with November issue) 6.00
 Moon Sets 3.00
9.00

A. JAEGER'S

4 ft. \times 2 1/8" I.D. Aluminum Tubing @ 1.20/ft. 4.80
 Rack and pinion focusing eyepiece mount for 2 1/8" I.D. Tubing 12.95
 Catalog .00
17.75

EDMUND SCIENTIFIC CO.

Q208 'Amateur Telescope Making, Book I' 5.00
 Q051 'Telescope Finders' .15
 Q243 'Making Your Own Telescope' 4.00
 60,039 360° Setting Circle 1.25
 3

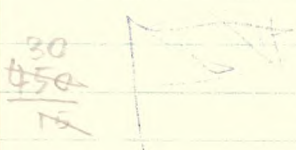
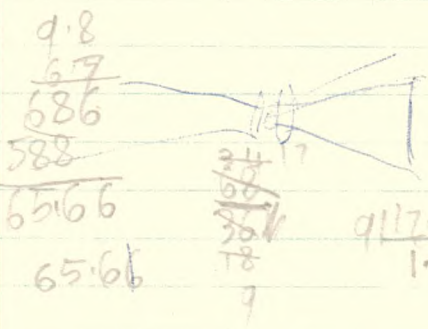
$$\frac{100}{500} = \frac{33}{3}$$

$$\frac{13}{6} = \frac{6 \overline{)13.00}}{216}$$

$$\begin{array}{r} 670 \\ 67 \\ \hline 603 \\ 67 \\ \hline \end{array}$$

$$\begin{array}{r} 68 \overline{)33} \\ 206 \\ \hline 33 \overline{)68.0} \\ 66 \\ \hline 200 \\ 198 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 67 \overline{)540.00} \\ 536 \\ \hline 400 \end{array}$$



$\frac{13}{6}$
 $\frac{65}{13} = 5$
 $\frac{65 \times 3}{20} = \frac{39}{4}$
 $\frac{1705}{155} = 11$
 $\frac{1}{4} \times \frac{55}{10} = \frac{55}{40} = 1.375$
 $2 = 7''$
 $\frac{30}{450} = \frac{1}{15}$
 3.5
 $15''$
 $\frac{45}{1.75} = 25.7$
 $3 \times 15''$
 $2 \times 10''$
 $4 \frac{1}{4} \times 45''$
 $2 \times 50''$
 $\frac{12 \overline{)68}}{5 \frac{8}{12}}$
 $\frac{8 \overline{)68}}{8 \frac{4}{8}}$
 $\frac{100}{15} = 6.7$
 $1 \frac{1}{4}''$
 $1 \frac{1}{2}''$
 $12 \times 5.7''$
 $8 \times 8.5''$
 $36 \times 1.9''$
 $10 \times 6.5''$
 $6.7 \times 9.8''$
 $30 \times 2.2''$
 $33 \times 2.1''$

Movie: "The Third Man"

Actor: Orson Welles

Actress: Jane Allynson

Television program: "Together with Music"

Television series: "Amalgam"

Comedian: ~~Steve Allen~~ Victor Borge

Female Singer: Peggy King

Male Singer: Harry Belafonte

Classic Orchestra: ~~Guy Surpaearts~~ Boston Pops

P. Pop. Orchestra: Guy Surpaearts

Magazine: Fantasy and Science Fiction

Book: "Fahrenheit 451"

27x1264 PCX .30

29x49 PCX .16

12.5x38 PCX .15

.61

7.51
(.9)
2.1
6.61
1.1 0.61

1b1 9 ^
E91 7 ^
221 b ^
1b 521 ^
79 81 ^
17 82
b2 07 ^

	6.5	23.13
	<u>6.5</u>	45 1041.00
4.25	325	90
<u>4.25</u>	390	141
2125	<u>4225</u>	135
850		60
<u>1700</u>	22	45
180625	71	150
		<u>135</u>
		1150

101
<u>27</u>
82
9E
9E
82
17

~~180625~~

82	101	9
9E	E91	7
36	101	9
36	127	b
27	11	5.21
23	09	81
	66	82
	50	07

9
1x8
1x3x2x7
2

OBS. 2.50
TUB. 4.50
EYE TUB. .40
28mm 7.95
15.35

1881

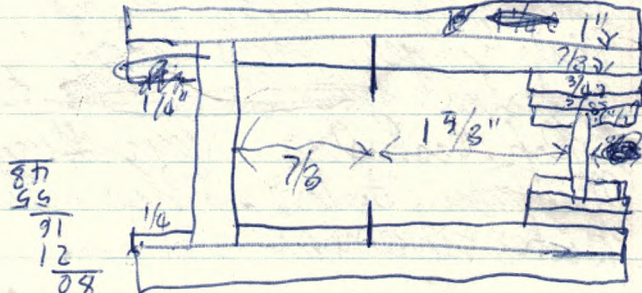
9L W 05
50 W 76
~~101~~
101
101
101

X	0000
X X X X X X	0000
X X X X X X	0000
X X	0000
X	0000

- M
 30 38mm ERFLE (A)
 64 18mm KELLNER (P)
 91 12.5mm KELLNER (P)
 127 0mm ACH. SYM. (P)
 163 7mm ACH SYM. (P)
 191 6mm HUYGENS (E)

- (1.2) 32mm X 31" Astronomical 2.50
 (1.6") 42mm X 41" Astronomical 4.00
 (2") 54mm X 50" Astronomical 12.50
 (3") 78mm X 15" f/5 Astromerzel 21.00
 (5") 128mm X 24 3/4" f/5 Astromerzel 85.00

20 + 7 = 27
 20 + 7 = 27
~~23~~
 19 + 7 = 26
 19 + 7 = 26
 25



87
 91
 12
 28
 28
 16
 91
 16.2422 | 91
 15.13
 - Exch. 5%
 14.95
 .75
 14.20



51.272
 791
 899
 448
 5.71
 1.91

14.95
 .05
 7.475

91
 5.71 x 6.91 = x
 5.71 x 6.91 = x x 91
 x : 5.71 = 6.91 : 91

14
 63
 327
 26
 14.95
 .03
 144 x 85
 26
 26
 25
 77

~~2.18~~
 14.50
 2.18

.75
 15

25
 7
 18

~~14.20~~
 18

14.2
 .15
 7.10
 14.2
 2.130

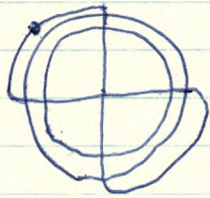
14.5
 .15%
 7.25
 14.20
 2.13
 16.33
 14.5
 14.5
 2.175

14.50
 2.18
 16.68
 1.67
 18.35

2.13
 1.63
 3.76

14.95
 3.76
 18.71

$$\frac{2191}{13}$$



1.6 45
 3.7 44
 4.6 24
 4.6 41
 4.8 31
 5.2 39
 5.3 6
 5.3 35
 5.5 34
 5.7 13
 5.9 22
 6.0 15
 6.0 46
 6.0 93
 6.1 67
 6.2 5
 6.2 37
 6.2 92
 6.3 2
 6.3 11
 6.3 36
 6.3 50
 6.4 3
 6.4 4
 6.4 16
 6.5 21
 6.6 12
 6.6 19
 6.6 62
 6.7 10
 6.7 33
 6.9 23
 7.1 29
 7.3 9
 7.3 28
 7.3 52
 7.4 38
 7.4 103
 7.5 18
 7.6 27

7.6 53
 7.7 14
 7.7 80
 7.9 79
 7.9 81
 7.9 94
 8.0 75
 8.1 51
 8.2 56
 8.4 1
 8.4 30
 8.4 66
 8.6 49
 8.6 106
 8.7 32
 8.7 104
 8.8 64
 8.8 82
 8.9 60
 8.9 69
 8.9 77
 9.1 96
 9.2 58
 9.2 87
 9.2 105
 9.2 107
 9.3 26
 9.3 57
 9.3 65
 9.3 84
 9.3 85
 9.5 63
 9.5 89
 9.6 59
 9.6 70
 9.6 101
 9.7 86
 9.8 72
 10.0 90
 10.0 108

10.1 61
 10.1 83
 10.1 99
 10.2 74
 10.2 88
 10.4 95
 10.6 100
 10.7 98
 11.0 109
 12.0 97
 12.2 76

7	Open Cl.	Scorpius Leo	
8	Diff. Neb	Lupus Lyr	Lagoon
17	Diff. Neb	Lyr	Enslava or horse
20	Diff. Neb	Lyr	Trifid
25	Open Cl.	Lyr	
42	Diff. Neb	Ori	Great Neb. in
43	Diff. Neb	Ori	
47	Open Cl.	Pup	
48	Open Cl.	Hya	
54	Glob. Cl.	Lyr	
55	Glob. Cl.	Lyr	
68	Glob. Cl.	Hya	
71	Glob. Cl.	Lyr	
73	Open Cl.	Ory	
78	Diff. Neb	Ori	
40	2 faint stars taken for Neb.		
91	Probably a Comet.		
102	Probably same as 101		

5	Open Cl.	1	Leo
6	Diff. Neb.	6	Lyr
4	Glob. Cl.	3	Ori
		1	Pup
		2	Hya
		1	Lyr
		1	Ory

Moon Sets.

PLATE I

234 HAGECIUS
 34 ROSENBERGER
 290 HANNO
 234 PONTECOULANT
 34 BIELA
 290 VLACQ
 WATT
 STEINHEIL
 LOCKYER
 153 JANSSEN
 101 FABRICIUS
 BRISBANE
 REIMARUS
 MALLET
 YOUNG
 251 RHEITA
 200 METIUS
 BRENNER
 WOehler
 PEIRESCIUS
 VEGA
 212 OKEN
 190 MARINUS
 FRAUNHOFER
 111 FURNERIUS
 STIBORIUS
 270 STEVINUS
 267 SNEELLIUS
 246 REICHENBACH
 209 NEANDER
 255 ROTHMANN
 224 PICCOLOMINI
 WEINEK
 44 BORDA
 BIDT
 WROTTESELEY
 219 PETAVIUS

132 PALITZSCH
 HASE
 ADAMS
 CROZIER
 MACCLURE
 69 COLOMBE
 73 COOKE
 204 MONGE
 257 SANTBECH
 41 BOHNENBERGER
 RASSE
 108 FRACASTOR
 POLYBIUS
 28 BEAUMONT
 78 CYRILLUS
 279 THEOPHILUS

PLATE II

Operation Moonwatch



Nine hours' observation of the moon from atop Mount Royal last night brought teams of local astronomers "no sign of anything out of the ordinary." In search of a possible Russian rocket, Mary MacKenzie, left, chairman of the Royal Astronomical Society's Lunar section

Montreal, records notes from observations by Vic Williams, centre, and [unclear] Wedge. The team was working from [unclear] to [unclear] quest by the [unclear] Observatory O