

Toronto Astronomical  
Society  
Minutes of Meetings & Council  
Jan. 1900 — Dec. 1902

OFFICERS

Honorary President	-	The Hon. Richard Harcourt, M.A., Q.C., Minister of Education.
President	-	Mr. G. E. Lumsden, F.R.A.S., 57 Elm Avenue, Rosedale.
First Vice-President	-	Mr. R. F. Stupart, Director of the Toronto Observatory.
Second Vice-President	-	Mr. C. A. Chant, B.A., Lecturer in Physics, Toronto University.
Treasurer	-	Mr. Charles P. Sparling, 30 Adelaide Street East, Toronto.
Secretary	-	Mr. W. Balfour Musson, 37 Yonge Street, Toronto.
Recorder	-	Mr. J. Edward Maybee, M.E., 103 Bay Street, Toronto.
Librarian	-	Mr. Z. M. Collins, The Canadian Institute.
Curator	-	Mr. D. J. Howell, The Canadian Institute.

MEMBERS OF COUNCIL

Messrs. A. Elvins, Larratt W. Smith, Q.C., D.C.L., John A. Paterson, M.A., Arthur Harvey, F.R.S.C., Past Presidents, and the Rev. Robert Atkinson, Mr. A. F. Miller, and Captain John G. Ridout.

PAPERS AND WORK—January to September.

JAN. 10th.—ANNUAL ADDRESS	-	"The Threshold of a New Century"	-	-	-	THE PRESIDENT
		It is expected that the Honorary President will preside.				
JAN. 22nd—THE SUN	-	(Lantern Illustrations)	-	-	-	MR. A. HARVEY, F.R.S.C.
FEB. 5th—WORLD ACCRETION	-	(Lantern Illustrations)	-	-	-	MR. A. ELVINS
—JUPITER	-	(Lantern Illustrations)	-	-	-	MR. W. F. DENNING, F.R.A.S.,
FEB. 19th—CONSTELLATION STUDY	-	(Lantern Illustrations)	-	-	-	
—"The Spring Constellations and How to Know Them"	-	-	-	-	-	REV. R. ATKINSON
—"Taurus and the Pleiades"	-	-	-	-	-	MISS M. T. SCOTT
—"The Belt of Great Stars from Sirius to Vega"	-	-	-	-	-	MR. J. A. PATERSON, M.A.
—"The Milky Way: its Clusters, Nebulae and Coal-sacks"	-	-	-	-	-	MR. J. P. CLOUGHER
—"The Zodiacal Light"	-	-	-	-	-	THE PRESIDENT
MAR. 5th—GREENWICH OBSERVATORY,—XIX. CENTURY	-	(Lantern Illustrations)	-	-	-	MR. T. LINDSAY
MAR. 19th—MARS—	-	(Lantern Illustrations)	-	-	-	
—"The Telescopic Appearance of the Planet"	-	-	-	-	-	MR. A. F. MILLER
—"Comparative Eccentricity of the Planet's Orbit"	-	-	-	-	-	CAPT. J. G. RIDOUT
—"Polar Ice-caps: Formation in Winter and Melting in Summer"	-	-	-	-	-	MR. W. B. MUSSON
—"Retrograde Motions of the Planet"	-	-	-	-	-	MR. J. H. WEATHERBE
—"The Martian Moons"	-	-	-	-	-	MR. J. PHILLIPS
APRIL 2nd—SOLAR CHANGES OF TEMPERATURE AND VARIATIONS IN RAINFALL	-	-	-	-	-	MR. R. F. STUART
—WATER VAPOUR	-	(Lantern Illustrations)	-	-	-	DR. P. H. BRYCE, M.A.
APRIL 16th—THE MOON—	-	(Lantern Illustrations)	-	-	-	
—"Changes in Aspect owing to Libration,"	-	-	-	-	-	REV. R. ATKINSON
—"The Advantages of Specialized Study"	-	-	-	-	-	DR. J. J. WADSWORTH, M.A., Simcoe
—"The Rill Systems of the Moon"	-	-	-	-	-	MR. J. E. MAYBEE, M.E.
—"Lunar Mountain Ranges"	-	-	-	-	-	PROF. A. J. BELL
—"Deformed Craters on Sea-floors"	-	-	-	-	-	MR. A. ELVINS
—"Some Selected Objects for Examination"	-	-	-	-	-	THE PRESIDENT
APRIL 30th—BIOGRAPHICAL PAPERS—	-	(Lantern Illustrations)	-	-	-	
—"Caroline Herschell: A Life of Devotion,"	-	-	-	-	-	MISS E. A. DENT
—"Faraday: A Life of Example"	-	-	-	-	-	MR. J. R. COLLINS
—"Wollaston: Chemist, Optician and Astronomer"	-	-	-	-	-	MR. A. F. MILLER
—"Olbers: A Life of Professional and Scientific Activity"	-	-	-	-	-	DR. A. D. WATSON
MAY 14th—COMETS—	-	(Lantern Illustrations)	-	-	-	
—"The Composition of Comets"	-	-	-	-	-	MR. R. DEWAR
—"The Spectra of Comets"	-	-	-	-	-	MR. A. F. MILLER
—"Halley's Comet: Its History and Next Apparition"	-	-	-	-	-	MR. JOSEPH POPE, Ottawa
—"Disintegration of Comets"	-	-	-	-	-	MR. J. A. PATERSON, M.A.
—"Donati's Comet." Personal Recollections: The President, and Messrs. Elvins, Harvey, Lindsay, Phillips, Weatherbe and others.	-	-	-	-	-	
MAY 28th—THE EARTH AS A PLANET—	-	(Lantern Illustrations)	-	-	-	
—"How the Earth is Weighed,"	-	-	-	-	-	MR. A. SINCLAIR, M.A.
—"How the Earth is Measured"	-	-	-	-	-	MR. A. T. DELURY, B.A.
—"Relative Importance of the Earth in the Solar System"	-	-	-	-	-	MR. T. LINDSAY
—"The Probable Appearance of the Earth and Moon from the Various Planets"	-	-	-	-	-	THE PRESIDENT
JUNE 11th—THE AURORA—	-	(Lantern Illustrations),	-	-	-	
1 —"Ancient and Modern Theories"	-	-	-	-	-	MR. Z. M. COLLINS
—"The Periodicity of the Aurora"	-	-	-	-	-	REV. R. ATKINSON
2 —"The Forms of Aurora"	-	-	-	-	-	MR. J. E. MAYBEE, M.E.
—"The Relation of the Aurora to Sun-spots"	-	-	-	-	-	MR. A. ELVINS
—"Various Remarkable Displays"	-	-	-	-	-	MR. S. D. CASWELL
—"Electrical Disturbances during Auroral Displays"	-	-	-	-	-	MR. R. F. STUART
JUNE 25th—CONSTELLATION STUDY—	-	(Lantern Illustrations)	-	-	-	
—"The Summer Constellations and How to Know Them"	-	-	-	-	-	MR. J. H. WEATHERBE
—"The Circum-polar Constellations"	-	-	-	-	-	MR. D. J. HOWELL
—"The Great Summer Stars, Antares, Spica, Capella, Regulus and Deneb,"	-	-	-	-	-	MR. J. A. PATERSON, M.A.
—"Summer Star Clusters"	-	-	-	-	-	MR. A. HARVEY, F.R.S.C.
—"Important Stellar Systems"	-	-	-	-	-	THE PRESIDENT

During the months of July and August the members of the Society will hold no regular meetings at the Canadian Institute for the reading of papers, but will avail themselves of every opportunity of assembling for special purposes as occasion suggests for out-of-door practical work and at the call of the President. Members owning telescopes will greatly advance the work of the Society if they will assist at the out-of-door gatherings and also invite members and friends to their observatories. The first regular Autumn meeting will be held at the Institute, on Tuesday, September 3rd, by which date the programme for the remaining portion of the year shall have been arranged.

Membership in the Society is open to everyone. The fees are: for Associates, residing elsewhere than in Toronto, and ladies, \$1; for other Associates, \$2; and for Life Members, \$20. Information may be obtained from any of the officers. Meetings are open to visitors.

J. EDWARD MAYBEE, Recorder.

Toronto, 1901, January 1st.

PLEASE PRESERVE THIS CARD.

2

The Opening Meeting of  
The Astronomical & Physical  
Society of Toronto <sup>for 1900</sup> held in  
the Library of the Canadian Institute  
Jan 23<sup>rd</sup> 1900

The President Mr. Geo E Lumsden  
F.R.A.S. occupied the chair.

The attendance was large.

The meeting took the form of a  
Conversazione, it having been  
announced that the retiring President  
would read the annual address,  
after which refreshments would  
be served.

The President addressed the meeting  
briefly and called upon the  
corresponding Secretary to read the  
communications received

The President and Council of  
The Astronomical and Physical Society  
of Toronto

request the pleasure of the company of

at the

Tenth Annual Conversazione

of the Society, which will be held in the Library of the  
Canadian Institute, Tuesday Evening, January 23<sup>rd</sup>.

The retiring President, Mr. Arthur Harney, F.R.S.C., will deliver an  
address on "Astronomy, in infancy, youth and maturity."

The President, Mr. G. E. Lumsden, F.R.A.S., will take the chair at 8 o'clock.

A letter had been forwarded to Hon  
R Harcourt Minister of Education in  
accordance with the resolution passed  
at the annual meeting.

Dear Mr. Harcourt,

I am directed to inform you that at the  
Annual Meeting of this Society, held to-day, the following Reso-  
lution was unanimously adopted :

"Moved by Mr. W. Balfour Mussen, seconded by Mr. G. G. Pursey,  
"and Resolved : That the Honourable Richard Harcourt, Q.C.,  
"Minister of Education of the Province of Ontario, be asked  
"to accept the position of Honourary President of this So-  
"ciety, in the room and stead of the Honourable G. W. Ross,  
"LL.D., who, having become Prime Minister of Ontario, has re-  
"signed the said office of Minister of Education, and relin-  
"quished the said office of Honourary President, which he  
"accepted and held as such Minister."

The Society would have preferred if it had  
been able to consult you as to your willingness to accept the  
position, but on the two occasions that I called at your De-  
partment I was not fortunate enough to find you in town.

Personally, I hope you will be good enough  
to assent to the unanimous wish of the Society, and to allow  
us to continue the distinction which we have enjoyed for some  
years,

The Honourable,

Richard Harcourt, Q.C., M.P.P.,

Minister of Education,

Toronto.

years, and which must necessarily follow upon such a recog-  
nition of the Society by the Official Head of the educational  
interests of the Province.

Mr Harcourt had replied as  
follows:-

201.  
Arch. '90.

Toronto.

Personal.

11th. January, 1900. 189

Dear Mr. Lumsden,

I have your letter of the 19th. instant containing a resolution asking me to accept the position of Honourary President of the Astronomical and Physical Society of Toronto. I do so with very great pleasure, and thank your Society for conferring this distinction upon me.

Geo. E. Lumsden Esq. F.R.A.S. Yours faithfully,

Cor. Sec. A. & P. Society of Tor.  
Canadian Institute Building,  
Toronto.

a letter had also been forwarded to Hon. Mr. Ross in accordance with the resolution passed at the last meeting

January 9th, 1900.

Dear Dr. Ross,

I am directed by this Society to inform you that on the occasion of its last Annual Meeting it unanimously adopted the following Resolution :

"Moved by Mr. G. E. Lumsden,  
"Seconded by Mr. C. P. Sparling,

and Resolved :

"That, on the occasion of becoming Prime Minister of the  
"Province of Ontario and of retiring from his position as  
"Minister of Education for the Province, this Society wishes  
"to place on record its appreciation of the countenance  
"given to the Society and its best interests by the Hon-  
"ourable G. W. Ross, LL.D., who, by reason of being such Minis-  
"ter of Education, was invited, and gladly assented, to become  
"the Honourary President of this Society, an office which he  
"has graced and which he has filled to the satisfaction of  
"the Society, and that a copy of this Resolution be for-  
"warded to Dr. Ross."

Personally, I have much pleasure in being the medium of the communication of the above Resolution.

Faithfully yours,



Corresponding Secretary.

The Honourable,

G. W. Ross, LL.D., M.P.P.,

Premier of Ontario,

Toronto.

(111/111)

Mr Ross had replied a previous:



Personal.

Toronto, 11th. January, 1900.

My dear Lumsden,

Kindly accept my sincere thanks for the very flattering Resolution adopted by the Astronomical and Physical Society of Toronto, in which you speak far too kindly I fear of my services as Honorary President.

Yours truly,

E. Lumsden, Esq.,

Toronto.

Lectures of regret at being unable  
to attend. The meeting will  
read from

Hon M Harcourt  
His worship the Mayor  
M Ayrton & Walker

The President then called upon  
Mr Harvey to read his address  
on the subject of which was  
"Astronomy, its infancy growth and  
maturity"

The address was received with  
marked attention throughout and  
at the close several members expressed  
their pleasure at having heard such  
an admirable presentation of the subject.

The meeting was then declared adjourned  
and an informal gathering of members  
and friends followed.

 J. H. Lindsay

Mr Laidlaw Hunter



Sacchi's Classification

4 <sup>after dark</sup> <sup>1 in Red - 2 in green 2 in blue</sup> <sup>+ bands</sup>

white  
yellow orange

- 1<sup>st</sup> continuous spectrum from red to violet  
spherical Vega etc etc
- 2<sup>nd</sup> Solar lay number of dark lines  
antennae - Arcturus - Procyon - a few major ones
- 3 dark bands sharp towards V plotted towards R.  
a minor, a Herminius, antares
- 4 Deep red color (small number)  
bands shading off towards the blue sharp towards red
- 5 both bright + dark lines and bands  
called Wolf - Rayet stars - only 100 and  
nearly all in central line of the milky way

outer planets not done page = 24 Sep 16

- dark nebula  
lenses and exists in bright nebula why not dark  
or superimposed on bright n

Infinite number of dark stars  
greater than bright stars

Quantum Hypothesis of light

Nebula Andromeda non gaseous  
possible other universes

THE Toronto Astronomical Society possesses several telescopes which are frequently used during the warmer season either on the Observatory grounds or on the grounds belonging to members of the Society.

Announcements of these open air meetings are usually made at the ordinary meetings of the Society or by special post card to the members.

Friends of members and those interested in Astronomy are cordially invited to attend these meetings.

The active membership of the Society consists of Fellows and Associates. Associate Membership is open to everyone interested in Astronomy and Astronomical Physics.

FEE—Fellows and Associates residing in Toronto, \$2.00; other Fellows and Associates and Ladies, \$1.00.

Ordinary Meetings are held in the Society's rooms in the Canadian Institute, Richmond Street East, Toronto.

## The Toronto Astronomical Society

1902

### January-June Session.

#### PAPERS, ETC.

#### List of Officers:

Honorary President . . . . .	The Hon. Richard Harcourt, M.A., K.C., M.P.P., Minister of Education.
President . . . . .	Mr. R. F. Stupart, F.R.S.C., Director of the Toronto Observatory and the Dominion Meteorological Service.
1st Vice-President . . . . .	Mr. C. A. Chant, M.A. (Tor.), Ph.D. (Har.), Lecturer in Physics, Toronto University.
2nd Vice-President . . . . .	Mr. W. Ralfour Musson, 37 Yonge Street, Toronto.
Treasurer . . . . .	Mr. J. Edward Maybee, M.E., 103 Bay Street, Toronto.
Secretary . . . . .	Mr. J. R. Collins, 131 Bay Street, Toronto.
Recorder . . . . .	Mr. John E. Webber, 6 Sultan Street, Toronto.
Librarian . . . . .	Rev. Robert Atkinson, 438 Ontario Street, Toronto.
Curator . . . . .	Mr. Robert Duncan, 516 Ontario Street, Toronto.

#### Council:

The above officers, with the following members, constitute the Council of the Society: Mr. A. F. Miller; The Reverend T. C. Street-Macklem, M.A. (Cantab.), LL.D., D.D. (Tr. Coll., Tor.), Provost of Trinity College; and Dr. A. D. Watson, elected by the Society, and the following Past-Presidents: Mr. Andrew Elvins; Mr. Larratt W. Smith, K.C., D.C.L.; Mr. A. Harvey, F.R.S.C., Honorary President and Director of La Institución Solar Internacional, Monte Video, Uruguay; Mr. J. A. Paterson, M.A. (Tor.); and Mr. G. E. Lumsden, F.R.A.S., and Membre de la Société Astronomique de France.

A course of Five Lectures by PROF. DE LURY, will, by the courtesy of the President of the University, be given in the Physical Lecture Room of the University.

PAPERS, ETC.

1902

Jan. 7th—"Astronomical Notes of the Past Year." Mr. G. E. Lumsden, F.R.A.S.

Jan. 15th—"The Making of a Great Telescope." Dr. J. A. Brashear, F.R.A.S., Chancellor and Professor of Astronomy in the University of Western Pennsylvania, and Honorary Fellow of the Society.

*PROF. DE LURY'S SPECIAL COURSE.*

Jan. 21st—"The Cosmos as understood by the Ancients."

Jan. 28th—"The Development of the Copernican Theory."

Feb. 4th—"The Newtonian Advance to Physical Astronomy."

Feb. 11th—"Special Consideration of the Solar System."

Feb. 18th—"La Place's Nebular Hypothesis and Stellar Evolution."

Feb. 25th—"The Planets," with Lantern Illustrations. Rev. Robert Atkinson,

Mar. 11th—"Phenomena of Polarized Light," with Lantern Illustrations. Mr. G. R. Anderson, M.A.

Mar. 25th—"The Spectroscope in Astronomical Research," with Lantern Illustrations. Mr. A. F. Miller.

April 8th—"The Pressure of Light in its Astronomical Aspect." Dr. G. F. Hull, Ph.D., Dartmouth College.

Ap'l 22nd—"The Apex of the Sun's Way." Mr. John A. Paterson, M.A.

May 6th—"The Transit Instrument and its Adjustments." Mr. F. L. Blake, D.L.S.

"Solar Radiation." Mr. Arthur Harvey, F.R.S.C.

May 20th—"Variable Stars." Mr. W. B. Musson.

June 3rd—"Lunar Ring Plains." Mr. G. E. Lumsden, F.R.A.S.

June 17th—An evening at the Observatory, with a short lecture on "The Constellations." By Rev. R. Atkinson.



The regular meeting of the  
Astronomical & Physical Society  
of Toronto, held July 6<sup>th</sup> 1900  
in the Canadian Institute.

The President Mr S E Kermiton F.R.S.  
occupied the chair.

The minutes of the previous  
meeting were read and confirmed.

Before proceeding to business the President  
announced that Mr D. J. Howell would  
show the members the chromoscope  
which had been loaned him by  
Mr Laidlaw of Hamilton. The slides  
placed under view were very much  
admired by all the members, ~~and~~

Correspondence was read from  
Dr J A Brashear, Southern By CO,  
and the British Astronomical Assn.

The recommendations of the council  
were read and formally adopted.

The discussion of the adoption of a  
seal for the society was postponed  
until the next meeting.

Mr J Britnell<sup>sr</sup> and Mr J Britnell<sup>jr</sup>  
were duly elected ~~actual~~ members  
of the Society.

2  
1

REPORT FROM COUNCIL.

The Council of this Society held its regular monthly meeting on Saturday, the 3rd instant. As a result of its deliberations, it was decided to recommend the Society :

1. To take up, at its next meeting, the subject of selecting a device for a Seal.

2. To authorize Mr. D. J. Howell, Director of Photography, to incur an expenditure of, say, \$5, in preparing the stellar lantern-slides he has now in hand, his account to be paid when rendered.

3. To consider the subject of purchasing an electric lantern for the purpose of projection.

4. To authorize the formation of a Solar Section to be composed of Members of the Society, and to appoint Mr. F. L. Blake to be the Director of the Section.

5. To give authority for the purchase from Mr. C. F. Sparling of four hundred post-cards, to be used in calling meetings of the Society, the price to be \$

6. To authorize the Librarian to renew the Society's subscription for The Astro-Physical Journal, and to subscribe for The Observatory and Astronomische Rundschau, and

7. To authorize the Corresponding Secretary to purchase a letter-copying-book.

All of which is respectfully submitted.

*W. H. L. L. L.*

Recording Secretary.

The Librarian reported the receipt of exchanges and presents since the last meeting

among the latter were volumes donated by Mr Britnell, Mr R. J. Muir, Mr Choult and Mr Harvey.

Further business was then suspended and the President called on Mr J. E. Mashee to read a paper on "Liquid air"

Mr Mashee's paper was illustrated by diagrams of the machinery used in the production of liquid air and proved of very great interest.

Mr Harvey, Mr Choult and others discussed the paper briefly all expressing the pleasure it had afforded them to hear Mr Mashee's able essay on the subject.

The meeting then adjourned to meet July 20 when various matters in connection with the welfare of the Society would be discussed.

After adjournment at the invitation of Mr Elwin the members partook of light refreshment

at the  
G. E. Lumberton  
President

This Sunday  
see list

The Council of the Society  
held a special meeting  
on Feb'y 17<sup>th</sup> at 3 pm.

Those were present  
 Messrs. Remond  
 Hawley  
 Elvins  
 Patterson  
 Z M Collins  
 J R Collins  
 W B Munson  
 J Phillips  
 H B Hendry

A discussion was entered into on  
several matters of general interest  
after which it was moved and  
carried by a majority of votes  
that the Society be recommended  
to arrange for light refreshments at  
the close of the meetings for 3 months.

H B Hendry  
 Secretary



Council.

A meeting of the Council was held on Saturday the 17<sup>th</sup> inst.; ten members were present.

It was decided to recommend the Society to authorize the expenditure of a sum not exceeding £30, in binding periodicals, donations, etc., and to approve, as an experiment, the serving of light refreshments at the regular meetings held during the next three months. To the latter recommendation three members voted nay and asked to be reported.

Respectfully submitted,

20<sup>th</sup> Oct. 1900.

H. P. Hurdway  
Secretary.

The regular meeting of the  
Astronomical & Physical Society  
held Feb 20 1900 in the  
Canadian Institute.

The President Mr Geo E. Kummer  
F.R.S. occupied the chair.

The minutes of the previous meeting were read and approved.  
Under business unfinished Mr Allen  
moved seconded by Mr Lindsay  
that the stamp now in use be used  
as the Society's seal. After a brief  
discussion it was ruled that a  
motion was not necessary and the  
matter of the seal was allowed to stand over.

Communications were read from  
Prof G. E. Hall and Prof Lodge

The recommendations of the council  
as per minutes of the last meeting  
were formally approved.

The librarian presented the statement  
of presents and exchanges since  
last meeting.

The phenomena to be observed  
during the next month were  
read as prepared by the President.

Under observations Mrs Craig reported  
an interesting experience had by Mr Craig  
in Dawson City he having seen the  
sun of on Jan 8<sup>th</sup> for the first time

in 5 weeks. Further observations from Mr. Craig were promised. Some specimens of gold dust from the Yukon district were shown by Mr. Craig.

Mr. A. F. Miller presented as received from Mr. A. H. Harker of Barrie two tracings of the curve of the aneroid barometer readings, one during December of 1899 and the other during January 1900. These were very interesting, showing a minimum reading over 11 days very nearly.

Mr. J. R. Collins reported having used glass fibres for spider lines in the field of a telescope finder and stated that the result had been very satisfactory.

It was announced that a committee would take into consideration the whole question of the best method of dealing with the Society's slides.

The President stated that Sir Sanford Fleming had recently been in the city and had suggested that if a clock were to be put on the City Hall it would be a good thing to have the 24 hour system marked upon the dial.

Commenting on this Mr. Miller thought that if the clock were installed it could be ~~in practice~~ ~~in use~~ ~~up~~ ~~the~~ ~~24~~ ~~hour~~ ~~system~~ ~~was~~ ~~worse~~ ~~than~~ ~~useless~~. Mr. Hawley thought that we would eventually come to it.

It was arranged that at the next meeting short papers would be read on Mercury, Venus and the Zodiacal light by Messrs. Atkinson, Elvins, Mills and Hindray.

Mr. Savigny reported having communicated with the ladies committee of the Woman's Council of Women in connection with the World's Fair at Paris and had forwarded a copy of the Society's transactions as witnessing the part ~~which~~ taken by women in Canada in scientific work.

The secretary was directed to replace the copy of the transactions which Mr. Savigny had sent.

The papers for the evening were then read.

Mr. Hindray read some notes on the solar eclipses of May next and showed on the blackboard the routes which might be taken to the various points in the path of the shadow.

The President then read a short paper on the work of the Society, reviewing the whole situation. A discussion followed which the lateness of the hour prevented being fully entered into. The meeting then adjourned to meet March 6.

Approved  
 G. E. Fensholt  
 President

Thos Hindray  
 Secy



15, RUE DE TIVOLI  
BORDEAUX

February 10. 00

The Secretary  
Astronomical + Physical  
Society. Bordeaux.

Dear Sir. Referring to your  
post-card July 17. 99.

Just back from Paris,  
I called on the Secretary  
of the Société astronomique  
who promised me to send

you regularly publication  
of our Society.

I am very pleased to  
- have been useful to the  
A. + P. S. Bordeaux. in this  
occasion + am at your  
disposal should you wish  
to have a corresponding  
member by the Société  
Astronomique de France

Trenvain

Dear Sir,  
Yours faithfully  
Paul Baudry

4

The regular meeting of the  
Astronomical & Physical Society  
of Toronto held March 6 1900 in  
the Canadian Institute

The President Mr Geo E Lumsden  
occupied the chair

The minutes of the previous meeting  
were read and upon amendment were  
approved.

Letters had been received from  
~~Mr J J Wadsworth~~; Mr J J Wadsworth,  
and Mr G. H. Shearman, and Mr Brashear,  
all of whom intended to take part  
in eclipse observations in May next.

The recommendations of the Council  
to begin papers for the evening promptly  
at 9 o'clock was read and approved

That ~~the reading of~~ at the  
ordinary meetings of the Society  
the just order of business  
~~at 10 o'clock~~ whereas the  
hour of 9 o'clock arrives  
shall be the reading of the  
paper for the evening.

Recommended

M. Watson

M. Harvey

Caro  
of Dunstable  
Park

The report librarian reported exchange and presents received since last meeting. In connection with this report a letter was read from M<sup>r</sup> M. Rendall of Bordeaux, France, promising that the publications of the Astronomical Society of France would be regularly sent to this Society.

Rev M<sup>r</sup> Atkinson read the predictions for the coming month, principal among which was an occultation of Saturn by the moon on March 23<sup>d</sup>.

The Report of the committee appointed to consider the question of purchasing a lantern was made by M<sup>r</sup> Miller.

The purchase of a Colt lantern was strongly recommended and M<sup>r</sup> Chant was asked to state his experience with ~~that form~~ the Colt there being several in the University. M<sup>r</sup> Chant unhesitatingly recommended the Society to purchase one after a short discussion it was moved by M<sup>r</sup> Atkinson and carried unanimously that the committee be empowered to take the final steps and purchase what they considered to be the best.



Reports of observations were made by Mr. Pusey and Mr. Atkinson. Mr. Pusey had made a sketch on the board illustrating the observation of veiled sun spots. Mr. Atkinson presented a note on the observation of a meteor seen on March 3<sup>rd</sup>.

Meteor. At 7.24 p.m. on Saturday 3<sup>rd</sup> March a fine large meteor was seen. It travelled at a comparatively slow rate from close to  $\beta$  Geminii to close to  $\delta$  Cancri when it broke up with a beautiful display of color leaving some sparks visible for a moment or two. The direction of the meteor was S.E. & it was visible for about 5 or 6 seconds.

R. A. Yerkes.

This had also been seen by a lady present.

The papers for the evening were then announced.

Mr. Atkinson began with a description of the planet mercury and the conditions prevailing on that planet.

Mr. A. T. Miller followed, dealing with Venus and recalling the occasion of the transit of 1874 when efforts were made to observe it from the observatory.

Mr. Elvius then read some notes on the zodiacal light, introducing sketches of the phenomenon as it had appeared to him years ago when Lowell was more favorably placed for such observations than now. Mr. Elvius thought that it would be hopeless to try now to see the zodiacal light on account of the glare from the electric arcs throughout the city.

Some contributions made by Mr. Elvius to the astronomical magazine in 1869 were referred to.

The hour for adjournment arrived before the various subjects had been exhausted and it was arranged to continue these at the next meeting and also to take up questions relating to the Sun.

The meeting then adjourned  
at next March 20

Thos. Lindray  
Secretary

Approved  
Wm. Brewster  
President

5  
 The regular meeting of the  
 astronomical & physical  
 Society of Toronto  
 held March 20 1910 in  
 the Canadian Institute.

The President Mr Geo Chamberlain  
 occupied the chair.

The minutes of the previous  
 meeting were read and con-  
 firmed.

Letters were read from  
 Professor Geo Hall  
 Secretary of Franklin Institute  
 President of Tulane University  
 New Orleans.

The President gave notice that  
 at the next meeting of Council  
 he would ~~now~~ introduce a motion  
 having reference to a change in  
 the name of the Society; also that  
 he would move for the publication  
 of a circular referring to the  
 receipts of May next.

Nominations for membership:

Miss Elsie Dent or Jane one

Miss Lillian Dent do

by Mr D. Howell and Mr Chas S. Spaulding  
 for active membership

Mr Bartholomew J. Smith ~~of~~

by Mr Elving and Mr Miles

for active membership

Mr Geo Chamberlain was  
nominated by Mr Elvins and  
Mr Miller for life membership.

The nomination of Mr Nathaniel  
had been delayed and it  
was moved and seconded  
he be declared elected.

This was carried.

The librarian reported presents  
and exchanges. Among these  
were the first volume of the publication  
of the Yerkes observatory and also  
a beautiful volume of photographs  
of stellar spectra donated by  
Dr William and Lady Huggins.

Books were also donated by  
Rev Mr Atkinson and Mr Elvins.

The thanks of the Society were voted to the donors.  
The committee on purchase of  
lenses reported that the order  
had been forwarded and the  
lenses would shortly be in the  
possession of the Society.

Rev Mr Atkinson read the list  
of predictions for the coming  
fortnight. Among these was the  
occultation of Saturn on the night  
of March 23<sup>rd</sup>.  
Observations were then reported  
by several members.

The planet Mercury at the eastern conjunction had been seen by several members and by some for the first time.

Mr. S. S. Pursey then read a short paper on the sun dealing with his method of making sketches by projection.

Mr. H. H. Wood followed with a description of the method pursued at the observatory.

A discussion was entered into on the general subject, ~~and in which~~ Mr. Hawley Woodhouse, which proved of much interest. Referring to the use of a non-achromatic telescope such as Mr. Pursey used in his studies, it was stated that while for direct observations there was no satisfaction with other than stated that it was certainly of very poor service in projection. For direct observation an achromatic telescope was of course preferable.

Mr. Atkinson presented a sketch of the appearance of the sky at sunset at Montreal on March 16 when the cloud configurations were particularly beautiful.

Mr. Woodhouse followed with a short paper on the brilliancy of Venus calling attention to the column in the annual

which gives the units of  
 brilliancy day by day  
 It was thought that a  
 study of these figures was  
 good preparatory work for  
 one taking up the study of  
 stellar magnitudes

The meeting then adjourned to  
 meet April 3<sup>rd</sup> when a paper  
 on mercury would be read by  
 Mrs. Fairley; also a discussion  
 on the subject of the solar  
 eclipse ~~was~~ discussed, and  
 a paper on the Atmosphere read by Mr. Mayhew

Thos. Hendray  
 Secy

approved  
 G. L. Lumbard  
 President

REPORT FROM COUNCIL.

The undersigned begs leave to report that a regular meeting of the Council was held on Saturday, the 31st of March, the President in the Chair. The following business was transacted :

1. Moved by Mr. Musson, seconded by Mr. Elvins, that the necessary steps be taken to change the name of the Society to that of "The Toronto Astronomical Society," on the understanding, however, that the objects of the Society are to continue to embrace all astronomical and astro-physical subjects, as heretofore.

Carried, Mr. Phillips dissenting.

2. Moved by Mr. Phillips, seconded by Mr. Elvins, that Mr. Harvey, Mr. Paterson and Mr. J. R. Collins be a Committee to prepare for publication a communication in defence of the claim of the Messrs. Collins Brothers to the invention of the principles underlying the construction of the Collins Monoplane Telescope.

Carried.

The following recommendations were approved of

1. That having regard to the approaching eclipse of the sun on the 28th of May and to the desirability of arousing public interest in the phenomenon, a circular letter be issued by the Corresponding Secretary of the Society, addressed to the Chairmen of School Boards in the cities, towns and incorporated villages of the Province, inviting their attention to the eclipse, and suggesting that teachers in schools be requested to explain to their pupils the laws governing eclipses of the sun, and to describe the phenomena observable on such occasions.

2. That the President issue a circular to certain members of the Society, expressing the hope that they would liquidate their arrears of fees and renew their interest in the active work of the Society.

The Treasurer laid before the Council a list of the members of the Society, showing the amounts due to the Society for the past and current years, and pointed out the necessity of subscriptions for membership being paid up promptly, in view of the fact that the Society is now incurring certain more than ordinarily heavy expenditures.

Various matters with respect to the necessity for making clear the duties of the officers of the Society were discussed, but no action was taken, pending the consideration of a draft for a new Constitution shortly to be submitted.

All of which is respectfully submitted.

*A. H. H. H. H.*

Recording Secretary.

6  
The regular meeting of The  
Astronomical & Physical  
Society of Toronto held  
April 3 / 1900 in the Canadian  
Institute

The President Mr Geo E Lumerton  
occupied the chair

The minutes of the previous  
meeting were read and con-  
firmed

The corresponding Secretary stated  
that Prof Geo E Hale had granted  
permission to the Society to  
reproduce the photographs of  
the moon taken in the Yerkes  
telescope.

Mr Atkinson read a letter from  
Mr Geo E Foster Ottawa on the  
~~in which it was stated that~~  
subject of a Canadian Expedition  
to view the Solar eclipse of May  
next. Mr Foster would be glad  
to help in any way possible.

A communication was received  
from the British Association for  
the Advancement of Science requesting  
this society to furnish a list of  
papers read during the past  
year.



A circular letter from Sir John G. Bourne was read requesting the Society to name its delegate to the meeting of the Royal Society at Ottawa this year.

It was decided to postpone the appointment of a delegate till the next meeting.

The President reported having had correspondence with the municipal authorities with reference to the annual grant. A difficulty appeared to be in the way on account of there not being positive evidence that the city could legally make a grant to this Society. This had been brought to the attention of the Honorary President, Hon R. Harcourt Minister of Education who had stated that he would exercise his influence in having the municipal act so amended that the city authorities would <sup>not</sup> ~~would~~ be troubled on the score of conscience in giving the grant to the Society.

The recommendations of Council as adopted at the Council meeting of March 31<sup>st</sup> were read.

After some discussion it was decided to adopt the Council report with the exception of the first clause, this to be discussed at the meeting of May 1<sup>st</sup>. This clause referred to a change in the name of the Society.

Miss Elsie Dent and Miss Helen Dent duly elected members of the Society.

The Librarian reported the receipt of presents and exchanges. Among the latter were the proceedings of the Franklin Institute.

Under new business the President stated that Mr W-F King of Ottawa had been in Toronto recently and had conferred with the President of Toronto University with reference to the founding of an observatory which would be for educational purposes and also partly for the public.

In view of the possibilities a committee of three was appointed to discuss the proposition with President London.

Mr John A Paterson, Mr A F Miller and the President would form the committee.

~~Observations~~ Reports of observations were then received.

Mr Craig read an extract from a letter received from Mr Geo Craig from the Yorkton District in which a halo around the moon was noted March 5. The moon was in the 1<sup>st</sup> quarter; was encircled by a faint pink halo and this again encircled by a larger and well defined penumbra.

Observations of the sun were reported by Mr. Pursey. The occultation of Saturn had been noted by the President and by Dr. Wadsworth. The former had observed ~~without~~ <sup>out</sup> ~~a telescope~~ of great aid and had seen the planet come into view from behind the dark limb of the moon.

Dr. Wadsworth had observed the emission also, at  $2^h 50^m 35^s$  standard time at his station, Lincoln, Ark.

It was announced that the next meeting would be devoted entirely to matters in connection with the solar eclipse of May 18<sup>th</sup>.

The paper for the evening will then read

Mr. Savigny read a brief sketch of the work done at Lowell Observatory in observing the planet Mercury.

Mr. Paterson gave a short and easy method of determining the moon's distance when the diameter is known and an observation allowed.

Mr. Elliot gave the figures which connect the distance with the diameter, deduced from the consideration of certain magic numbers so-called.

Mr A. S. Miles followed with a review of the work of Sir J. Sturton and Lord Rayleigh in spectroscopy. There having been only a few minutes allotted for each member's <sup>paper</sup> and it was found that the time was quite insufficient to allow of Mr Miles' treating a most interesting subject as ~~the~~ as it should be treated.

It was therefore resolved to place Sir W. Thopps' large volume on stellar spectra in the care of Mr Miles and with the understanding that at a future meeting he would take up the subject again.

Mr J. L. Mather then read a paper on the construction of a plane table and showed one which he had made and which served the purpose admirably.

This occasioned a short discussion after which the meeting adjourned till April 17<sup>th</sup> when the chief order of business would be as above stated.

G. E. Lunn  
President

Thos Lindsay  
Rec Sec

opportunity offers I will be  
to put in a word.

Yours very truly,

W. S. Foster



2nd April, 1900

Dear Mr. Atkinson,

I have yours of 24<sup>th</sup> ult. with  
reference to possible observations  
by Canadians of the total  
eclipse of the sun, which is  
to be best visible at points in  
Southern States. I think quite  
favourably of the proposition, &  
something should be done by  
Government - to assist in  
this about - and if you can per-  
suade them to take it up, I can assure  
you that our friends will cordially  
join in support. I will keep  
the matter in mind and, although  
I have no power of initiative, I

Rev. R. Atkinson  
498 Ontario St }  
Toronto }

The regular meeting of the  
Astronomical & Physical Society  
of Toronto held April 17<sup>th</sup> 1900  
in the Canadian Institute

The President Mr Geo Edmunds  
occupied the chair

The minutes of the previous meeting  
were read and confirmed

Letters were read from  
The Secretary of the O'Brien Library  
Mr J S H Shearman  
Rev Mr Irl Hiers  
Prof E E Barnard  
Prof G E Hale  
Mr W. F. King

Further business was then postponed  
and a number of short papers  
read on the general subject of the  
eclipse of the Sun of May next.

Mr Elvins spoke on the eclipse, ~~and~~  
from the imaginary standpoint of  
the center of the Sun.

The President took similarly a  
position on the planet Venus

Mr Edmunds read an account as  
if from an observer on the  
moon.

A short paper from J. W. Adcock was also read as if from an observer on the moon.

M<sup>r</sup> J. R. Callinot read some notes on what may be expected to be done by professional astronomers during the coming eclipse.

M<sup>r</sup> W. B. Mason reviewed the attempts at made to detect intra-mercurial planets.

M<sup>r</sup> Miller explained the method of studying the solar prominences with the telescope and spectroscope.

M<sup>r</sup> J. F. Johnson then projected a series of slides on the screen, representing recent eclipses, and also showed a series of photos of the moon taken from those published by the Paris observatory.

The meeting then adjourned to meet ~~at~~ <sup>on</sup> May 1<sup>st</sup>

Thos Lindsay

Approved.

G. F. Johnson  
President

delegate to be appointed

# The Royal Society of Canada.

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## GENERAL MEETING OF 1900.

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*The Nineteenth General Meeting of the Royal Society of Canada will commence at 10 o'clock in the morning of Tuesday, the 29th of May next, at the City of Ottawa, in the Normal School Building (entrance on Elgin Street, North Gate).*

*The Council will assemble in the office of the undersigned at 2.30 of the afternoon of Monday, May 28th.*

*All Fellows and others who propose to contribute papers, should send titles and abstracts—type-written if possible—to the Honorary Secretary in the first week of May.*

*All Associated Historical and Scientific Societies are requested to send the names of their delegates to the meeting by the 15th of May.*

*Address :*

**SIR JOHN BOURINOT, K.C.M.G.,**

*Hon. Secretary R. S. C.,*

*Ottawa, Can.*

*Ottawa, March 7th, 1900.*



The regular meeting of The Astronomical and Physical Society of Toronto held May 1<sup>st</sup> 1900 in the Canadian Institute.

The President Mr. Geo. E. Lumsden in the Chair.

The minutes of the previous meeting were read and confirmed.

Communications were read from Dr. Loudon Toronto University re establishment of Astronomical Observatory.

C. M. Barry, Dorchester, re guiding lenses.

T. S. Shearman

Rev. Mr. Atkinson, stating inability to be present and requesting the Chairman to consider the writer as in favour of changing name of the Society.

Dr. J. J. Wadsworth, re observations.

Prof. Hale.

The President having explained to the meeting the objects for changing the name of the Society and due notice having been mailed to each member, the following motion of Mr. A. Elvins seconded by Mr. A. F. Miller was unanimously carried.

"That the Report of the Council of its last meeting be adopted in full, embodying the change of name of this Society to 'The Toronto Astronomical Society' with the continuation of the objects of the Society to embrace all astronomical and astro-physical subjects, as heretofore.

Moved by Mr. W. B. Musson and seconded by Mr. R. F. Stupart that Dr. Geo. C. Hale, F.R.S. be elected an Honorary member of this Society - carried

The Committee on the Collier's Telescope reported progress.

The Treasurer was instructed to draw a cheque for \$8<sup>00</sup> to retire some valuable Reports lying in the Custom House for the Society.

The Librarian presented his report.

Rev. Mr. Atkinson sent in his predictions of Phenomena.

Messrs Lumsden, Pursey, Stupart and Elvins reported Observations.

Mr. D. J. Howell exhibited a photo of the Sun taken to-day.

The Chairman announced a paper from Mr. A. Elvins for the next regular Meeting.

Mr. C. A. Chant, assisted by Mr. D. J. Howell with the Lantern, gave a very interesting talk on 'Standing or Stationary Waves.'

The meeting then closed with refreshments in the adjoining room.

W. B. Musson  
42  
President

Chas. Pursey  
Acting Secretary

ADDRESS REPLY TO  
JAMES BREDNER,  
REGISTRAR

UNIVERSITY OF TORONTO  
REGISTRAR'S OFFICE

May 4 1900

Mr W. B. Inneson.

Truro.

Dear Sir

I am instructed to inform you that this afternoon the Council of the University, appointed President Loudon, Professor Baker, and Mr Chant as a committee to confer with the Committee of the Astronomical and Physical Society respecting the establishment of an observatory & the purchase and erection of a telescope.

The Council has advised that your communication be transmitted to the Senate.

Yours truly,

James Brebner

9  
The regular meeting of the Toronto Astronomical Society was held in the Canadian Institute on Tuesday the 15<sup>th</sup> May, the President in the chair. There was a large attendance of members & visitors.

Mr. D. D. Caswell was requested by the President to act as Secretary. The minutes of the last meeting were read & confirmed.

In the absence of the corresponding Secretary, the President read the following communications:—

From the Registrar of the University of Toronto, stating that President London, Prof. Baker, & Mr. C. A. Chant had been appointed a Committee to confer with the Society respecting the establishment of an Observatory & the purchase & erection of a Telescope:

From Mr. W. F. King, C.E., D.L.S., Chief Astronomer, Ottawa, regretting that his absence from that City would render it impossible for him to act as the Society's delegate to the Royal Society of Canada:

From Sir Sandford Fleming intimating that he would have pleasure in acting as the Society's delegate on the occasion referred to.

From Mr. A. Y. Hunter, M. A., of Barrie, remitting the sum of \$5.<sup>00</sup> to cover fees as an Associate member.

From Prof. W. W. Campbell, in charge of the Lick Observatory Eclipse Party at Thomaston, Georgia, inviting the President of the Society to assist in the photographic work of the Observatory staff on the occasion of the total Solar Eclipse of the 28<sup>th</sup> May, 1900, and requesting him to be present on the 24<sup>th</sup> so that he could take part in the drill necessary to prepare the party.

From various Railway Agents respecting routes & fares to points in the South.

From Dr. J. A. Brashear, S. R. A. S., of Allegheny, Pa., stating that an Eclipse Party would leave for Union Springs, Alabama, on Friday the 25<sup>th</sup> & that preparations were being made for the setting up of a number of instruments including cameras. Prof. Wadsworth would be in charge. An invitation to the President to join the party was extended.

The President laid on the table the Order of his Honour, the County Judge, dated the 5<sup>th</sup> May, 1900, changing the name of the

Society) to that of "The Toronto  
"Astronomical Society."

It was announced that a meeting of the Council would be called for the 19<sup>th</sup>, to discuss various matters including the suggested new Constitution, the serving of light refreshments during the summer, and certain items of business.

Moved by Mr. Arthur Harvey & seconded by Mr. G. G. Pursey, that Sir Sanford Fleming be asked & appointed to act as the Society's delegate during the approaching meeting of the Royal Society of Canada

Carried

The Librarian presented his report.

Mr. Harvey read a note upon the periodicity of Sun Spots and of magnetic disturbances and, referring to the great group of spots in April, said that investigation showed that it was not central, as had been reported by some observers, when the magnetic storm of that month occurred.

Observations were reported by Messrs Harvey, Pursey, A. J. Miller, R. S. Dupont, and the President. Mr. Miller described a bright aurora which occurred on the

4<sup>th</sup> of May and showed a peculiarly shaped dark segment, it being irregular in form or broken in upon by wide pencils of rays or streamers reaching upward from the horizon after this manner:—



The President pressed upon the attention of the Society the desirability of taking advantage of every possible opportunity to observe carefully the phenomena of the partial eclipse of the Sun on the 28<sup>th</sup> inst. Suggestions and advice were offered by several members.

The President appealed to members to offer papers sufficient to enable a list for the ensuing three months to be prepared & issued.

Mr. R. F. Bryant, Vice President, read a paper upon Geismology. Having traced the history of the science down to modern times,

Mr. Stupart explained the means by which, at the Toronto Observatory and at Victoria, B.C., in common with seismological observatories throughout the world, the intensity of earthquake shocks is recorded photographically. The wisdom of the setting up of seismographs at Toronto & at Victoria was conclusively established, these two instruments forming, as it were, important links in the chain of seismological observatories around the world.

The paper was illustrated by a series of slides projected on the screen, and was followed by considerable discussion, in which a number of members and visitors, including Mr. S. Mogi, of Japan, took part.

It was announced that at the next meeting Mr. A. Elvins would read a paper on the "Ray or White Streaks which radiate from Tycho," and that at the subsequent meeting Mr. J. R. Collins would contribute a paper upon some phenomena associated with the Reflection of Light.

The Society then adjourned to meet on the 29th May next.

R. F. Stupart  
President

J. D. Caswell.  
Acting Recorder.



The regular meeting of the Toronto Astronomical Society was held in the Canadian Institute on Tues. evening, the 29<sup>th</sup> May, the Vice President Mr. R. F. Rupert, being in the Chair.

The Minutes of the previous meeting were read & confirmed.

The following communications were read:—

From the Rev. Geo. B. Ward, of Eastwood, re the Path of the Eclipse, and why Venus as an evening star is so late in setting this Spring.

From Mr. Walter H. Stevenson, of Tenlon Falls, acknowledging receipt of a paper on the Eclipse sent him about two weeks ago; telling of the good view they had of it in Tenlon Falls, and mentioning that the dandelions closed there during the obscuration.

The Report of the Council under date of the 19<sup>th</sup> May, was read & confirmed.

Some discussion was entered into with regard to the use of the Society's Lantern Slides, Mr. D. J. Howell taking exception to the prevailing impression that any member of the Society had a perfect right

Jenelon Falls May 28<sup>th</sup> /00

Ladies(?) & Gentlemen

Please accept thanks  
for paper on the eclipse sent me  
about two weeks ago

We had a splendid view of it  
here to-day. Dandelions closed  
& we tried the card photograph &  
found it a success (i.e. card with  
small hole above another card). & we  
also found that by looking down into  
the smoked glass ~~smoke~~ side up that  
we saw the eclipse with greater ease  
& just as distinctly as by looking up.  
It was on the whole first class for a side  
show, you might perhaps arrange for the main  
part to pass through Canada next year.

Astronomical & Physical Socy  
Toronto





Yours respectfully  
Walter H. Stevenson

JOHNS' AGENCY,  
Established A. D. 1873,  
GRAVENHURST.

MAY 28 1900

Debit *compt* of *f* R. Kimber Johns  
R. Kimber Johns,  
Land Agent, Conveyancer, &c.

*begin 7.52 per page*  
CANADA  
MAY 28 1900  
7  
1  
5.05

	8.28		8.50
	9.03		9.25

CANADA POST CARD

THE ADDRESS TO BE WRITTEN ON THIS SIDE



*A. Elmsley*  
*Canadian Inst*  
*Toronto*

JOHNS' AGENCY,  
Established A. D. 1873,  
GRAVENHURST,

MAY 28 1900

R. Kimber Johns,  
Land Agent, Conveyancer, &c.



9.35

*Ont*

REPORT FROM COUNCIL.

A meeting of Council was held on Saturday, the 19th instant. President in the Chair.

Moved by Mr. Paterson,  
Seconded by Mr. Phillips :

That the Reverend R. Atkinson be permitted the use of certain lantern slides at an open meeting at which he was to speak on the subject of Astronomy on the evening of the 21st instant, subject to the undertaking of Mr. Atkinson to return the slides in the condition in which he received them, and to make good any injury, if any, sustained by them, and to the condition that the granting of this permission should not form a precedent for future action.

Carried, Mr. Harvey and Mr. Musson dissenting.

Moved by Mr. Harvey,  
Seconded by Mr. Paterson :

That the sum of twenty-five Dollars be advanced on the honourarium payable to Mr. Thomas Lindsay as Recorder and Editor, the advance being made in view of Mr. Lindsay's intended visit to the Southern States to observe the total eclipse of the sun on the 28th instant.

Carried.

The President submitted a draft of the new By-laws for the Society, the discussion of which was postponed until typewritten copies could be supplied to members of Council.

The Librarian was authorized to place a shelf in the base of the book-case on the north wall of the Library, and to hang a chintz curtain in front of the base.

The following accounts were ordered to be paid :

The Howell Book Company, for lantern slides, etc, -----	\$8.80
The Carswell Company, Limited, on account of publication of Report for 1899, -----	45.45
For binding, etc., -----	12.45

The Librarian was requested to make inquiries as to the best disposition to be made of the Society's book-case and telescope, still at the Technical School.

All of which is respectfully submitted.

to use them at any time, and saying that if such was the case he could not make himself personally responsible for them. If the slides are of value to the Society, they must be looked after by some one fully authorized by the Society, who would be held responsible, and not allowed out of the custodian's hands without a written authority from the Council.

The Rev. Mr. Atkinson explained that he had made application for the slides some ten days before he required them, regretted any inconvenience Mr. Howell or any of his family had been put to, and said he was quite willing to make good any damage of which he had been the cause.

Mr. Harvey said that at a recent meeting it was decided that the slides should not go out without regulations satisfactory to Mr. Howell — although at the next meeting of the Council the Rev. Mr. Atkinson was given permission to have them.

The Librarian then gave his report, and the Rev. Mr. Atkinson gave one or two predictions of phenomena.

Observations were then reported by Messrs. Harvey, Elvins, Miller, Stupart, & the Rev. Mr. Atkinson, and Mrs. Savigny.

Mr. Harvey handed in a drawing he had made of the Curve of Temperature, taken during the recent solar eclipse & also read a letter from The Rev. Dr. Caswell, President of the Meaford Astronomical Society, reporting the result of their observations & enclosing their thermometrical figures.

Mr. Elvins laid upon the table a post card he had received from Mr. R. Kilner Johns, of Gravenhurst, giving seven drawings of the eclipse as seen there.

Mr. Stupart said that from the appearance of their weather chart, in nearly every place of observation in the United States, they must have had most advantageous weather for viewing the ~~eclipse~~ <sup>eclipse</sup>. He also told of the photographic & other work done at the Toronto Observatory on the morning of the 28<sup>th</sup>, after which Mr. D. J. Howell exhibited on the screen the views taken of the charts of temperature &c.

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No 1 ————— <sup>h m s</sup> 8 " 9 " 4 Standard Time  
 " 2 ————— 8.41.57  
 " 3 Maximum — 9.0.37  
 " 4 ————— 9.40.2  
 " 5 ————— 10.11.32

First Contact — <sup>h m s</sup> 4 " 51.30 — 5<sup>s</sup> earlier  
 Last Contact — 10 " 16 " 54 7 "  
 Duration = 2.25.19

Mr. Howell also gave two or three slides he himself had taken with a small camera, one being of the crescent shaped shadows shown beneath the trees.

Mr. Harvey & others also referred to these shadows.

Mr. A. Elvins then read the paper for the evening, on "Lunar Rays," illustrated by lantern views.

At the conclusion of his paper a picture of Her Majesty, Queen Victoria, was thrown upon the screen & Mr. Elvins spoke very feelingly of her good qualities, and finished by saying she was: -

- "A beautiful girl,
- "A beautiful Mother,
- "A beautiful Queen;
- "God save the Queen."

The meeting then adjourned.

Approved  
H. E. Lumsden  
Pres<sup>t</sup>

J. D. Caswell.  
acting Recorder.

The regular meeting of the  
Toronto Astronomical Society  
held June 12<sup>th</sup> 1900 in the  
Canadian Institute

The President Mr Geo E.  
Lumsden occupied the chair

The minutes of the previous  
meeting were read and con-  
firmed

A letter was read from Prof.  
G. E. Hall, acknowledging the  
notification of his having been  
elected ~~to the~~ an honorary  
member of this society

The librarian reported receipt of presents and exchanges since the previous meeting noting briefly the articles of special interest in the various publications.

The President called attention to increasing value of the library and hoped that members would ~~use the volumes~~ make the best possible use of the volumes now being accumulated.

Under predictions the President noted that there would be an <sup>partial</sup> eclipse of the moon beginning shortly after the meeting would adjourn. This was of special interest as being the first of a new series of the 18 year recurrence.

Several members briefly reported observations made during the past fortnight. Mr. Harvey stated that he had observed the phenomena of Jupiter's satellites on the evening before, one of which had not been found in the almanac list. Mr. Pursey reported that there were no spots on the sun.

~~off~~ out ~~to~~

The President then announced that at the next meeting Mr J.R. Collins would read a paper on "Reflection Flight", and in making this announcement conveyed the thanks of the Society to Mr Collins who had suggested kindly that he forward the reading of his paper to the next meeting. Mr Collins object was to bring reports of eclipse observations to follow as early as possible the time of observation.

The President then stated that although it had been announced through the press that the report of his own observations would be presented this was not strictly correct. He desired to postpone a full report when the photographs of the Lick observatory party had been received. At a future meeting he would ~~present~~ be prepared to discuss these ~~papers~~ fully. He would however briefly report this evening following Mr Lindsay's paper on his ~~at~~ observations at Waterboro.

Mr Lindsay then read a short account of his journey to Waterboro N.C. and his observations there, showing some photos of the eclipse camp and one of the corona taken by Mr David E Hodder associate member of this Society residing at Alta Iowa

He had observed in the telescope throughout having a magnificent view of the prominences and inner corona but, by reason of having used a neutral tint shade glass, missed the variations in colour and missed the extension of the coronal streamers.

Mr Hodder had been more exact; had exposed three plates, taken a look in the telescope and also with unaided eye, doing as much as it was almost possible to do in 90 seconds.

After the reading of Mr Lindray's account the President showed some photos brought from Thomaston Ga. where he had observed with the hill observatory party. and briefly described the arrangements about the camp. One photo of the corona was shown taken by a local photographer with a small camera. It was interesting to note that this was remarkably like the one taken by Mr Hodder; both represented mid-totally. A drawing of the coronal streamers made by Mr Lindray was shown.

Before the reading of the ~~paper on~~ the eclipse reports Mr Lindray read a letter received from St. Brosnan who had commented on the fidelity of Mr Lindray's drawing as compared with the photos.

After the reading of these papers  
and notes Mr Elvins presented  
the letters and pictures received from  
correspondents who had viewed  
the eclipse.

These were  
From Mr Samuel Byrne  
A L Weatherbee  
J R Ginnon who sent many photos  
Mr Ca Merrill  
Mr Watson

Mr Elvins then presented, to be taken  
as read, a short paper ~~on~~ suggesting  
how the solar corona might be seen  
in daylight without an eclipse.

The meeting then adjourned to  
meet June 26<sup>th</sup>

Thursday

Reese

app'd  
G. L. P.  
P.

A meeting of Council was held on June 19<sup>th</sup> & considered the new constitution of the Society

There were present

The President, in the chair

Mr Harvey

Mr Stupart

Mr Ridout

Mr Pursey

Mr Elms

Mr Jk Collins

Mr Z Collins

Mr Musson

Mr Philips

Mr Spauling

Mr Lindsay

The clauses relating to the duties of the Officers were read, and with slight amendments ~~was~~ being ~~considered~~ made

The clauses relating to membership and the objects of the Society were partly discussed. The lateness of the hour prevented the bringing down of a complete revision of the draft

An Account for curtains in the library 5<sup>50</sup> was read & he paid, also a small fee for 50"

The meeting adjourned to meet at the call of the President

Her Lindsay



Lorah

The regular meeting of the  
Astronomical Society held  
June 26 in the Canadian  
Institute

The President Mr. Geo E  
Lewander occupied the chair.

The minutes of the previous  
meeting were read and confirmed

The president read extracts  
from a letter received from a  
lady of Tennessee who had  
formed one of the eclipse party  
in Georgia. The lady made enquiries  
regarding the formation of an astron-  
omical society

Under new business it was  
reported that the incandescent  
light would shortly be put in  
the new building and the meeting  
made more comfortable in this  
respect

The librarian reported the exchanges  
he received since last meeting

Among predictions of phenomena  
were noted about the occultation  
of Saturn on July 10<sup>th</sup>, the conjunction  
of Mercury, now occurring at, and  
the approach of the Perseid meteor

Miss  
Jere Horne  
of "Calvan Lake  
Home", her  
nondes plume

Mr Joseph Weatherbee 21 Langley Ave  
was nominated for active membership  
by Mr Phillips

Under observations Mr Lindsay reported  
having observed Venus close to a  
small star in Gemini, on the evening  
of May 27<sup>th</sup>. ~~The star~~ <sup>the star</sup> may have been occulted  
by Venus in the southern hemisphere

Mr Hawley reported observations of  
Venus noting specially, that the  
northern cusp was distinctly blunted  
on the evening of June 17<sup>th</sup>. Several  
friends had spent an evening at  
Mr Hawley's house in telescopic work.

Saturn had been finely observed,  
I had seen on the ball and  
the division of the ring pointed.  
A transit in pass of one of Jupiter's  
satellites had been noted on  
the evening of the 16<sup>th</sup>

Mr Miller reported observations  
of Jupiter and presented a  
drawing made at his telescope.  
He called attention to the fact  
that Jupiter was now ~~very~~ nearer  
to us than he would be in any other  
part of his orbit.

Referring to double star observations  
Mr Miller stated that ~~the~~ <sup>the</sup> ~~companion~~ <sup>companion</sup> of Scorpius  
was now nearly discerned as a  
double but that some 8 or 10  
years ago it could not be divided  
~~to~~ ~~with~~ with the same optical aid

The President reported observations of the sun and made a series of sketches of the blackboard illustrating the solar disc as seen between June 17 and 24. The spot which had passed off the disc by rotation ~~was~~ might be looked for again on July 5<sup>th</sup>

The ~~matter~~ <sup>question</sup> of meeting for outdoor work was briefly discussed and it was decided to hold the next meeting at the Observatory if this would be agreeable to Mr. Stupart.

Mr. J. R. Collins then read his paper on "Reflection of light" This was of particular interest, and ~~was~~ <sup>discussed</sup> several points in connection with the subject not commonly known being brought out. A brief discussion followed after which the meeting adjourned to meet July 10<sup>th</sup>

Approved,

W. S. Stupart,  
President.

W. S. Stupart,  
Rec. Sec.

Copies of the Moon by W. S. Stupart  
W. S. Stupart

A meeting of council was held July 3<sup>rd</sup>

The discussion of the clauses in the new constitution proposed was continued and some amendments made.

The printing of the draft was recommended. A printed form it would be brought before the society for final approval

It was recommended to discontinue the reading of papers and <sup>the</sup> formal business of the society during July and August, but to hold meetings for outdoor work on the regular evenings. Mr. Stewart having arranged for the meeting of Tuesday July 11<sup>th</sup>, Mr. Paterson invited the society to meet at his residence on July 26<sup>th</sup>

On motion of Mr. Elvins it was recommended to place the small lantern at his disposal if any member wished to make use of it.

Thos Lueding  
Secretary

Woodstock  
Ont.  
Canada  
Nov. 28, 1900

Dear Dr. Loomis, -

I am pleased to see by the reports in the newspapers, of your observation of the eclipse of last month.

I observed from Norfolk, Va., and was favored with a clear sky. I organized a party of observers from the passengers on board the steamer "Gemasee" - that being the boat I took at Philadelphia for Virginia. I obtained four photographs with a small camera during totality and six with a lens of 4 1/2 in. focal length in an attempt to secure the corona during the partial phase. I have not yet developed all these. Successful shadow band observations were

made on a 6 x 8 ft. white cotton  
surface, and, before second contact  
a brief visual spectroscopic exam-  
ination was made. The present  
camera is not yet completed  
and could not be used.

Respectfully  
Yours,  
J. S. H. Shearman

17

Open meeting of the  
York Astronomical Society  
held at York Observatories  
July 10 1900

It had been the intention to  
work this evening observations  
but the sky being cloudy it was  
not possible to use the telescopes several  
of which had been placed on the lawn

The members therefore met in the computing  
room of the Observatories and transacted the  
business of the evening. The minutes of the previous  
meeting were read & confirmed.  
A letter was read from Mr Shearman of  
Brentford who had observed the total eclipse  
at Norfolk. also a letter from Mr J E Hodder  
of Acton Iowa

Mr J H Weatherbee of 221 Langley rd  
York was duly checked as a new  
member of this Society

The recommendations of the Council  
as per the meeting of July 3 were  
read and approved.

The President briefly reviewed the  
changes which were proposed in the  
Constitution of the Society after which  
it was decided to ask for tenders  
for printing the draft constitution

In noting last month the different impressions of the same astronomical objects observed with the same instrument by different persons, I did not allude to the question of the imperfection of the eye. If an observer sees the spots on Jupiter of a reddish purple or thinks the chief belts of the planet are blackish, it is probable that his eyes are affected by Daltonism - a peculiar infirmity which is more common than generally believed. It might be well for all who use telescopes to have their eyes carefully examined by an optician so as to be able to refer to its true cause the features of stars and planets they see differently from others. The chief cause of irregularity is probably astigmatism, which can now be readily detected by the Optoscope, which any good optician possesses. I had my own eyes tested and found them free from any trace of this defect. Therefore I can judge of the relation of the equatorial and polar diameters of Jupiter, whatever may be the position of his equator with respect to the vertical. The apparent distances of the two stars of a double are the same to me in whatever quarter of the heavens they may be, and the varying inclination to the perpendicular of the line joining them makes no difference in this respect, as it would do to an astigmatic eye. Different estimations of the spaces between the canals on Mars are doubtless due to this defect in the observers eyes.

Wm Leo Brewster, of his impediments,

Under the general head of observation Mr Harvey reported the result of the work of a celebrated European oculist who had examined the eyes of Mr Leo Brewster. It appeared from the research that in planetary observation the state of the eye should be considered to thoroughly understand the meaning of shade of colour and minute markings



has recently been informed that his right eye is short sighted, but not astigmatic nor affected by Daltonism. His left eye has a longer focus but is astigmatic, so that observations made with it must be subject to error. Her Brewster's measures of the diameter of Jupiter give more flattening ~~at the poles than previous work,~~ as he habitually uses the right eye, of which the vision is very acute, and very sensitive to color impressions, he was anxious to know if in any respect that organ was likely to lead him astray. She is to be congratulated on the result of the Vienna oculists thorough diagnosis.

A <sup>brief</sup> discussion was entered into on the subject of ~~photograph~~ eclipse photography, Mr. Harvey suggesting that Mr. Shearman be made acquainted with recent researches in that direction.

The meeting then adjourned to meet for observation on July 24 at the residence of Mr. John A. Paterson

Thos. Lueday

Approved,

James B. ...  
President.

The meeting of the Toronto  
Astronomical Society, held  
July 24<sup>th</sup> at the residence  
of Mr. John A. Paterson, Walmey Rd.

This meeting had been announced  
for observational work but the  
weather being quite unpropitious  
the members who assembled were  
invited in doors and the business  
routine proceeded.

The minutes of the previous meeting  
were read and confirmed.

An interesting discussion was entered into  
regarding variable star observations  
and also on delicate measurements of  
temperature, the latter occasioned by  
a paper in a current periodical, which  
was read by Mr. Paterson and which  
dealt with measurements of the heat  
of the solar corona.

Mr. Atkinson announced the predictions  
of the ensuing month and the  
discovery of a comet by Mr. Brooks  
was noted.

Short papers on constellation study  
had been prepared by ~~the~~ the  
President and Mr. Paterson.

Mr Paterson dealt with the constellation Scorpio bringing forward a great deal of interesting matter in connection therewith.

The President followed with some remarks on the constellation Libra in the course of which he referred to the late Mr Proctor's researches on the origin of the constellation names.

Before the meeting adjourned arrangements were made to continue observational meetings and the evening of Aug 4 was set apart as a regular meeting, instead of Aug 7<sup>th</sup> to be held at the Linnæus Observatory.

Wm  
Chambers  
Thos Lindsay  
Secy

An open meeting of the Society  
was held Aug 7 at the  
Smith Observatory

Several telescopes were placed  
on the lawn by Miss Atkinson  
Callins Clark & Watson. The  
large telescope of the Ministry series  
was also placed at the disposal  
of the members by Mr. Shepard the  
Director.

An enjoyable evening was spent  
the weather being very pleasant  
The work of Jupiter & Saturn were  
principally viewed

at a late hour the meeting  
adjourned till Aug 21<sup>st</sup> at  
the Lyceum Institute.

The building  
has been

The regular meeting of the  
Toronto Astronomical Society  
held at the Canadian Institute  
Aug 21<sup>st</sup> 1900

Mr A. T. Miller occupied the chair

The minutes of the previous meeting  
were read and confirmed

A letter was read from the  
President who was unable to attend  
Several <sup>other</sup> letters which he had received  
had been forwarded and were read

These were from Prof Brooks  
from the <sup>President</sup> Director of the Solar Institute  
of Montpelier and from Dr J J  
Woodworth of Toronto

Miss M. E. Eichen of Toronto  
was duly elected an active member  
of the Society

The Librarian reported the receipt  
of some presents and exchanges and  
would bring in a full report at  
the next meeting

Several observations were reported  
by <sup>the chairman</sup> Mr. Ellis Mr. Hemmell  
Mr. Ellis had observed Jupiter and Saturn  
and the Lagoon Nebula  
With Mr. Miller he had observed the system  
of Saturn with the view for the purpose of

Institute Observatory.  
July 30-1900 ✓

Dear Mr. Lounsdon -

I thank you very much indeed for your kind congratulations on my new discovery, also for the assurance of the interest which your excellent Society takes in my work.

Please accept for yourself, and convey to the members of the Society, my high regards, and best wishes for the prosperity of the same.

I observed my new comet yesterday morning

and its position  
as follows —

July 28<sup>th</sup> 14<sup>h</sup> 35<sup>m</sup>  
R. A. 2<sup>h</sup> 49<sup>m</sup> 5<sup>s</sup>  
+ 27° 11'

The motion is abt  
3° daily a little e  
& north.

Thus on: July 26 (13<sup>th</sup>  
its place was —  
R. A. 2<sup>h</sup> 46<sup>m</sup> 30<sup>s</sup> +.

I have no reprint  
my article on Com  
Seeking, but if I ca  
procure one I will s  
it to you with pleasur

Most Sincerely  
Wm. P. Brook



determining the angular diameter of the ring. The result agreed very closely with the diameter given in the N.A.

Mr. Howell had obtained several meters in the evening of Aug 17. These were probably Persian.

A short paper which Prof Boss had written on comet sweeping was read and discussed.

A paper contributed by Mr. Elkins to the Ichno Star was read dealing with the possibility of there being <sup>planets</sup> just the distance between Venus and Mercury.

Before the meeting closed Mr. Elkins called the attention of observers to ~~the~~ a form of telescope which he had constructed not quite achromatic but capable of good service in certain classes of observation.

A discussion ensued on the merits of this form of telescope.

The meeting then adjourned to meet Sept 12.

appd  
G. D. P.

Thos Lindsay

The regular meeting of  
the Toronto Astronomical Society  
held Sept 4 1900

The President Mr Geo E Lunnister  
occupied the chair

The minutes of the previous  
meeting were read and con-  
firmed

Letters were received as follows  
From the President of the University  
of California announcing the  
sad news of the death of Prof  
James E Keeler, Director of the  
Lick Observatory

From Prof Sweeney of the University  
of Nebraska referring to the eclipse  
work at Thomaston

From Mr W F Denning of Bustad  
referring to observations of  
Gracobinis comet

From Prof Buchanan of Lebanon Tenn.  
and who forwarded his account  
of eclipse observations

The President had also received  
from Mr<sup>r</sup> Home of Memphis  
Tenn, a description of the  
eclipse of 1878 which ~~that~~ <sup>that</sup> ~~took~~  
Mr<sup>r</sup> Home had observed.

in Colorado  
&  
9/15/00  
H. May

Mr A Elms moved that it be recorded on the minutes of this Society that it ~~was~~ <sup>had</sup> learned with the deepest regret of the death of Prof. Kuler. The work of the distinguished astronomer was briefly reviewed and it was shown how very important had been his contributions to astronomical science.

Mr A. P. Miller seconded the motion and called attention to the great care with which Prof Kuler's work had always been done. So exact had it ~~also~~ been that his announcements were at all times authoritative, not the smallest point being overlooked.

Mr Lindsay, also spoke briefly, to the motion calling attention to the kindness with which Prof Kuler showed to amateurs at all times.

It was then resolved that this Society sympathize with the friends of Prof Kuler and with the scientific world in the loss sustained by his death.

The Librarian reported the receipt of exchanges and presents, among which was the fourth set of lunar photographs from the Paris observatory.

Observations were reported  
by several members

An evening with the telescope had  
been profitably spent at  
the residence of Mr Weatherbee, a  
small party having assembled there  
for observational work

Mr Miller reported observations of  
tau Ophiuchi

Mr Pursey had been observing the sun  
and had found the surface comparatively  
free from spots. One small spot  
had appeared on Sept 4 as if about  
three days in from the limb but Mr  
Pursey thought this had not come  
over the limb but had broken out

Mr Spaulding had noted a peculiar  
appearance of the clouds after  
sunset, the color being pinkish  
this Mr Miller thought would be  
the effect of contrast

Miss Dent had also observed this  
appearance. Mr Mabee reported  
an interesting observation of the moon  
with a field glass.

The President reported observations of  
Orion in broad daylight on Aug 21<sup>st</sup>

## The Toronto Astronomical Society

.....  
The Society has pleasure in announcing the following  
Meetings, Papers, etc.:—

- SEPT. 18TH—"The Great Nebula in Andromeda."  
(Lantern Illustrations)  
—REV. ROBERT ATKINSON
- OCT. 2ND—"Later Criticism of the Nebular Hypothesis Re-  
viewed."  
(Lantern Illustrations)  
—MR. J. R. COLLINS
- OCT. 16TH—"World Accretion."  
(Lantern Illustrations)  
—MR. ANDREW ELVINS
- OCT. 30TH—"Earth"  
(Illustrations)  
—MR. A. F. MILLER
- NOV. 13TH—"Recurrence of Eclipses."  
(Lantern Illustrations)  
—MR. THOMAS LINDSAY
- NOV. 27TH—"Some Contributions of Astronomy to Practical  
Life and Thought."  
—MR. J. EDWARD MAYBEK
- DEC. 11TH—Nomination of Officers for 1901.  
"Art and Astronomy."  
—MR. J. A. PATERSON, M.A.
- DEC. 27TH—Annual General Meeting.  
"The Experience of an Amateur in popularizing  
Astronomy."  
(Lantern Illustrations)  
—MR. T. R. CLOUGHER

Membership in the Society is open to every one.  
Meetings are held in the Canadian Institute. The Chair  
is taken at 8 p. m. The Librarian is in attendance on  
Saturdays from 2 to 5 p. m.

THOMAS LINDSAY,  
RECORDING SECRETARY.

PRIVATE POST CARD

**THE TORONTO ASTRONOMICAL SOCIETY**

MR. W. B. MUSSON, 37 Yonge Street,  
MR. CHAS. P. SPARLING, 30 Adelaide Street East,  
MR. THOS. LINDSAY, 72 King Street East.

Secretary  
Treasurer  
Recording Secretary

*Moon's effect on weather  
No effect      Mr Stupart*

After further discussion of observations the President announced that draft copies of the new constitution would be distributed and that at the next meeting some time would be spent in discussing the proposed changes, and also the advisability of continuing the publication of the Society's Transactions.

~~Some of the members thought that the publications of the Society had never been of much value. Mr. Spaulding stated that he would shortly be able to lay before the Society a proposition to publish a serial which would take the place of the yearly volume.~~

It was then announced that at the next meeting a paper on the nebula in Andromeda would be read by Mr. Atkinson.

An open air meeting would also be announced for the following week.

*[Handwritten signature]*

This Sunday  
Bebe

M<sup>r</sup> Geo Redout and <sup>Mrs King</sup> ~~D J~~ Abbott  
were nominated for membership

The Librarian presented his report of  
exchanges and presents since last meeting.

Observations were reported by several  
members

M<sup>r</sup> Lindsay had observed the spectrum  
of the lightning on the preceding Saturday  
evening and had noted the bright  
lines. ~~in this~~ Attention was called to the  
fact that M<sup>r</sup> Elvins had on a previous  
occasion observed the spectrum as  
continuous, a rare observation.

M<sup>r</sup> Massee and M<sup>r</sup> Spaulding ~~at~~ while <sup>observing</sup>  
the lightning visually had noted three  
parallel streaks running to earth,

M<sup>r</sup> Hawley reported observations of Jupiter,  
and ~~at the time of the~~

M<sup>r</sup> Miller referred to ~~the~~ in looking up  
Amerson etc at this time.

M<sup>r</sup> Hawley under notes and queries asked  
what caused the light of lightning.

After ~~some~~ a brief discussion M<sup>r</sup> Miller,  
referred to the appearance of the spectrum of lightning  
which indicated that oxygen & nitrogen were  
burning in the flash.

M<sup>r</sup> Atkinson then proceeded to  
read his paper on the nebula in



Antisymmetry. The paper was  
illustrated by several <sup>lenses</sup> views

An interesting discussion followed  
several members expressing their  
views on the nuclear hypothesis generally.

It was announced that at the  
next meeting Mr. J. Collins would  
read a paper dealing with the criticisms  
on the nuclear hypothesis.

The meeting then adjourned to meet  
Oct 2<sup>nd</sup>

W. P. R.  
G. R. P.

Thos. L. L. L.  
R. L. L.

The regular meeting of the Toronto Astronomical Society held Oct 2 1900 in the Canadian Institute

The President Mr Geo E Lundstedt occupied the chair

The minutes of the previous meeting were read and confirmed

The Librarian reported that, he had been advised of the satisfactory state of the treasury at the present time and would be ready to consider the advisability of improving the library by the expenditure of part of the funds for books

The President announced that at the next meeting he would appoint a small committee to act with the Librarian

Mr J. Howell read a full report of the state of the lantern slides under his care. This was received as being very satisfactory. Some suggestions were offered as to how some of the series of slides might be made more complete. A detailed list for consideration of purchase would be presented at a future meeting

Letters were read as follows  
 From Herman S Davis of Washington  
 asking for the Society's publications

From Prof Pickering advising  
 of his efforts to complete the  
 Society's list of Harvard observation  
 Annals.

From Prof J. J. See who forwarded  
 a copy of a paper on the improvement  
 of definition in refracting telescopes

Rev Mr Aikinson read a letter from  
 the Principal of the St Andrew's  
 College thanking the members  
 of the Society who had arranged  
 an evening with the telescope  
 for the students of the college and  
 offering the use of the grounds  
 at any time.

The corresponding secretary read  
 letters received from  
 Dr Brashear  
 Canadian Institute  
 Buffalo Society of Natural Sciences  
 Arthur New of Cardiff Wales  
 Sub Director of Lick Observatory

Under new business Mr Howell  
 moved that designs for a  
 seal for the Society be asked  
 for to be duly considered

The President stated that he would  
 receive such designs as the members  
 might offer

Mr Geo Ridout was duly  
 elected an active member of  
 the Society

Mrs King of Toronto was duly  
 elected an active member  
 of the Society

Prof A J Bell of McMaster  
 University was nominated  
 for active membership by  
 Mr Harvey and Mr Lumsden

Mr Joseph Pape of Ottawa was  
 nominated as an associate  
 member under the new constitution

The President ~~announced~~  
 brought forward the question of  
 the proposed change of constitution  
 that was properly before the Society  
 and was open for discussion

The clauses as amended were  
 read out approved as far as  
 the clause relating to method of  
 nominating officers. This gave rise

A discussion.

At nine o'clock the subject was still under discussion and that being the hour for the paper of the evening the matter was allowed to stand till the next meeting.

Mr. J. H. Collins then read a paper on the <sup>recent</sup> criticisms of the nebular hypothesis dealing with what had been urged both by opponents and supporters of the theory. An apparatus was introduced to illustrate how retrograde motion became possible thus being one stumbling block in the way.

Mr. J. Howell assisted with some lantern views of nebulae.

It was announced that at the next meeting Mr. Howell would show the series of slides which were in the temporary possession of the Camera club, illustrating the new process of colour photography. The meeting then adjourned to Oct 16.

*[Handwritten signature]*

Thos. Lindsay  
Secretary

statement including a list of such property, and an agreement to make good on demand any loss or injury such property may sustain as a consequence of such loan.

GENERAL PROVISIONS.

L. This Society shall continue to be an independent body, and shall not become merged in any other Society, body or organization. The Society shall have a Common Seal of such device as shall be approved of by the Society.

LI. Subject to such terms and conditions, general and special, as the Society shall impose, other Societies having, in whole or in part, like purposes and objects, may become affiliated with it.

LII. Subject to the Statutes in that behalf, the Society may receive and hold gifts, grants and bequests of real property, and donations of personal property, including money, stocks, manuscripts, books, instruments, etc.

LIII. Every ordinary contributor to the property of the Society shall be recorded as a Benefactor, and as such his or her name shall be read at the Annual General Meeting.

LIV. No By-law of this Society shall be suspended at any meeting thereof unless with unanimous consent.

LV. All By-laws of the Society heretofore adopted are hereby repealed, and for them are substituted the By-laws hereinbefore set forth.

APPENDIX.

FORM NO. 1.—NOMINATION PAPER FOR AN ASSOCIATE.

A. B. (here state the name in full, the calling and the usual place of residence of the candidate), being desirous of admission into THE TORONTO ASTRONOMICAL SOCIETY, we, the undersigned, being active members thereof, hereby propose and recommend him as a proper person to become an Associate.

Witness our hands, this                      day of                      19 .

E. F. } (From personal knowledge)  
C. D. }

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## CHARTER AND BY-LAWS

OF THE

## TORONTO ASTRONOMICAL SOCIETY

*Adopted 16th October, 1900.*

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## CHARTER.

### DECLARATION.

WE the undersigned CHARLES CARPMAEL, and ANDREW ELVINS, GEORGE GALLOP PURSEY, GEORGE EDWARD LUMSDEN, DAVID JAMES HOWELL, and ALLAN FREDERICK MILLER, all of the City of Toronto, in the County of York, and Province of Ontario, Esquires.

DO DECLARE:—

1. THAT we are of the full age of twenty-one years.
2. THAT we desire to become incorporated as a Society under the provisions of The Revised Statute of Ontario, Chapter 172, entitled "An Act respecting Benevolent, Provident and other Societies."
3. THAT the intended corporate name of the said Society is THE ASTRONOMICAL AND PHYSICAL SOCIETY OF TORONTO.
4. THAT the objects of the said Society are:—
  - (a) To encourage, advance and popularize the study of Astronomy and Physics, and to diffuse as widely as is practicable, information in those branches of Science.
  - (b) To publish, from time to time, the results of the work of the Society in the form of Transactions, which shall contain such Notes and Papers as shall have been approved of for publication, and
  - (c) To acquire and maintain a library and such apparatus and other property, both real and personal, as may be necessary and convenient for the due carrying out of the said objects of the Society or any of them.
5. THAT we are the managing officers of the said Society, duly elected, and that the mode by which our successors are to

be appointed has been provided by the Constitution and By-laws of the said Society, of which a copy is hereto annexed.

CHARLES CARPMAEL, President.  
A. ELVINS, Vice-President.  
G. G. PURSEY, Treasurer.  
G. E. LUMSDEN, Corresponding Secretary.  
D. J. HOWELL, Recording Secretary.  
A. F. MILLER, Librarian.

On the Eighth of March, A.D. 1890, before me personally appeared the said Charles Carpmael, Andrew Elvins, George Gallop Pursey, George Edward Lumsden, David James Howell and Allan Frederick Miller, to me known to be the individuals described in the foregoing Declaration, and acknowledged that they had signed the same for the purposes therein mentioned.

(Seal) JOHN G. RIDOUT,  
Notary Public for Ontario.

AFFIDAVIT.

PROVINCE OF ONTARIO, }  
County of York. }  
To Wit: }  
IN THE MATTER OF the application of Charles Carpmael, of the City of Toronto, Esquire, M.A., F.R.A.S., and others, for incorporation as The Astronomical and Physical Society of Toronto, under the provisions of The Revised Statute of Ontario, Chapter 172.

I, ANDREW ELVINS, of the City of Toronto, in the County of York, and Province of Ontario, Esquire, make oath and say:—

1. That I am one of the applicants for incorporation as aforesaid under the provisions of "An Act respecting Benevolent, Provident and other Societies."

2. That the proposed corporate name The Astronomical and Physical Society of Toronto, save and except having been the name of the hitherto unincorporated Society now seeking incorporation by

this application, is not the name of any other known incorporated or unincorporated company or society, or a name liable to be unfairly confounded therewith, or a name otherwise on public grounds objectionable.

SWORN before me, at the City of }  
Toronto, in the said County of York, } A. ELVINS.  
this eighth day of March, A.D., 1890. }

JOHN G. RIDOUT,  
Notary Public, Ontario. (Seal.)

I, JOSEPH EASTON MACDOUGALL, Judge of the County Court of the County of York, do hereby certify that the within Declaration appears to me to be in conformity with the provisions of the First and Second Sections of the Revised Statute of Ontario, Chapter One hundred and seventy-two, entitled "An Act respecting Benevolent, Provident and other Societies."

Dated at Toronto this tenth day of March, A.D., 1890.

JOSEPH E. MACDOUGALL,  
County Judge.

\*Filed 11th March, 1890, in the office of the Provincial Registrar for Ontario.

JOHN F. C. USSHER,  
Deputy Registrar.

To  
His Honour JOSEPH EASTON MACDOUGALL, Judge of the County Court of the County of York.

THE PETITION of The Astronomical and Physical Society of Toronto,  
HUMBLY SHEWETH:

1. THAT on the Tenth day of March, A.D., 1890, Your Honour was pleased to grant your Certificate, under the provisions of the Revised Statute of Ontario, Chapter 172, 1887, respecting the incorporation, under that Act, of Your Petitioner.

2. THAT for reasons of expediency, but chiefly in order that it may possess the shortest corporate name capable of indicating its objects, Your Petitioner desires to change its name, under the provisions of Section 20, Chapter 211, R. S. O., 1897.

3. THAT at a meeting of Your Petitioner held on the First instant, it was unanimously resolved to change the name of Your



Petitioner to that of "The Toronto Astronomical Society," a name which is not open to objection on the ground mentioned in the said Section.

YOUR PETITIONER THEREFORE PRAYS that Your Honour may be pleased to sign an Order reciting the Certificate and Declaration of Incorporation in this behalf, and making the change desired.

AND YOUR PETITIONER, as in duty bound, will ever pray.

G. E. LUMSDEN,  
President.

Dated at Toronto, this Fourth day of May, 1900.

CERTIFICATE.

WHEREAS it has been made to appear that on the Tenth day of March, A.D., 1890, I did, under the provisions of R. S. O., Chapter 172, 1887, grant my Certificate relative to the incorporation of The Astronomical and Physical Society of Toronto;

AND WHEREAS it has been further made to appear that it is expedient that the corporate name of the Society should be changed, and that the change desired is not for any improper purpose or otherwise objectionable;

AND WHEREAS the said Society has by its Petition prayed that its corporate name should be changed under the provisions of R. S. O., Chapter 211, to that of "The Toronto Astronomical Society,"

NOW, THEREFORE, I, Joseph Easton Macdougall, Esquire, Judge of the County Court of the County of York, by virtue of the authority in me vested by the said last mentioned Act, DO HEREBY ORDER AND DECLARE that on, from and after the date hereof the corporate name "The Astronomical and Physical Society of Toronto" shall be changed to and be that of "THE TORONTO ASTRONOMICAL SOCIETY."

JOSEPH E. MACDOUGALL,  
County Judge.

Dated at Toronto, in the County of York, this 5th day of May, A.D., 1900.

Filed 9th May, 1900.

JOHN F. C. USSHER,  
Deputy Registrar.

BY-LAWS.

OBJECTS OF THE SOCIETY.

I. The objects of THE TORONTO ASTRONOMICAL SOCIETY shall be:

(a) To study astronomical and astro-physical subjects, and such cognate subjects as the Society shall approve of and shall, in its opinion, tend to the better consideration and elucidation of astronomical and astro-physical problems, and to diffuse theoretical and practical information with respect to such subjects;

(b) To publish from time to time the results of the work of the Society, and

(c) To acquire and maintain a library, and such apparatus and real and personal property as may be necessary and convenient for the carrying into effect of the objects of the Society.

MEMBERSHIP.

II. The members of the Society shall be enrolled in two divisions, to be known as "Active Members" and as "Honorary Members," respectively.

III. The Active Members shall consist of persons duly elected to be Associates, Life Associates, Fellows and Life Fellows, respectively.

(a) The Associates shall form the ordinary membership of the Society.

(b) The Fellows shall be chosen from among the Associates in virtue of scientific attainments or services.

(c) Life Associates and Life Fellows shall be persons elected as such and as hereinafter provided.

IV. The Honorary Membership shall consist of Corresponding Fellows, of whom there shall at no time be more than twenty-five; of Honorary Fellows, of whom there shall at no time be more than fifteen; of Patrons and of an Honorary President.

(a) Corresponding Fellowship may be conferred as a recognition of eminent scientific attainments or services;

(b) Honorary Fellowship may be conferred as a recognition of scientific attainments or services of the highest order.

(c) Any person may be named and enrolled as a Patron of the Society if he shall have rendered illustrious services to the Society, or shall have presented to it substantial gifts of instruments, books or apparatus, or shall have paid at any one time the sum of one hundred dollars for its benefit or towards its purposes.

V. Honorary Members shall pay no fees and shall have no votes.

VI. Upon the adoption of these By-laws, every Active Member in good standing, shall, *ipso facto*, become an Associate; every Life Member shall become a Life Fellow; every Corresponding Member shall become a Corresponding Fellow and every Honorary Member shall become an Honorary Fellow of the Society.

#### ELECTION AND ADMISSION OF ASSOCIATES.

VII. Any person desirous of being admitted into the Society as an Associate, must be proposed and recommended agreeably to Form No. 1 in the Appendix hereto. The nomination paper must set forth the name in full, the calling, and the usual place of residence of the candidate, and must be subscribed by at least two active members of the Society, one of whom must, of his personal knowledge, certify that the candidate is a proper person to become an Associate.

VIII. Every proposal and recommendation for the election of an Associate shall be read aloud at one of the regular meetings of the Society, and handed to the Recorder, by whom it shall be posted up in the Library of the Society until the opening of the meeting at which the candidate is to be balloted for.

IX. A candidate may be balloted for at any regular meeting of the Society, provided at least seven Fellows and Associates are present, and that the requirements of By-law VIII have been complied with.

X. No candidate shall be held to have been duly elected unless he have in his favor at least two-thirds of the Fellows and Associates present when the balloting takes place.

XI. So soon as a candidate shall be declared to be duly elected, the Recorder shall endorse the fact upon the nomination paper and hand it to the Treasurer, who shall notify the candidate according to Form No. 2 in the Appendix hereto, and shall, at the same time, transmit to him a copy of the Constitution and By-laws of the Society and of its Roll of Membership for signature.

XII. Every candidate elected to be an Associate shall pay his fee within two calendar months of the day of his election, otherwise his election shall be null and void.

XIII. Every elected Associate having subscribed the Form No. 3 in the Appendix hereto, and having duly paid his fee, shall be admitted to the Society at the first regular meeting at which he is present, according to the ensuing form of words, namely, the President, addressing him by name, shall say: "In the name of The Toronto Astronomical Society, I admit you an Associate thereof," but an elected Associate not able to attend that meeting of the Society may be admitted by proxy, his proposer or seconder representing him, in which case, Form No. 3 having been subscribed and the Treasurer's certificate as above mentioned having been produced, the President addressing such proxy by name, shall say: "In the name of The Toronto Astronomical Society, I admit.....an Associate thereof."

#### ELECTION AND ADMISSION OF FELLOWS.

XIV. An Associate, not in arrears and being otherwise eligible, may be nominated as a candidate for Fellowship. The nomination shall be according to Form No. 5, and shall be read aloud at a regular meeting of the Society, whereupon it shall be posted by the Recorder in the Library until the next regular meeting, when the President shall take the pleasure of the Society on the question whether it shall be referred to the Council for a report. If the decision of the Society be in favor of such reference, the Council shall take the matter into consideration and shall have due regard to the qualifications of the candidate, including, if they exist, his application as a student, his fitness as a teacher, his success as an observer, his original work, the value of the papers he has contributed, the regularity of his attendance on the meetings of the Society, and the interest he has manifested in its welfare and usefulness. When prepared

to do so, the Council shall make a special report as to the fitness of the candidate, and such report may be accepted, modified, tabled or rejected by the Society at a regular meeting. Voting at any stage in a candidature for Fellowship shall be by ballot, and unless a two-thirds vote, whether in Council or in general meeting, favors election, the nomination shall be held to have failed.

EXPULSION OF A FELLOW OR AN ASSOCIATE.

XV. Whenever there may appear to be sufficient cause, other than non-payment of moneys due to the Society, for the expulsion of any Fellow, or Associate, from the Society, the President shall lay the subject-matter of the complaint before the Council, at an emergency meeting, if necessary, and if the Council approve, he shall at once call a special meeting of the Society for the purpose of taking such action as is proper, and (not less than twelve Fellows and Associates being present), if three-fourths of those who vote agree by ballot that the offending Fellow or Associate should be expelled, the President, or other person in the chair, shall declare the same, and thereupon the said offender shall be expelled accordingly, and his name shall be struck by the Recorder from the Rolls of the Society.

FEES.

XVI. Unless otherwise provided, the annual fee of a Fellow or of an Associate shall become due and shall be payable on the first day of January in each year. The fees shall be as follow:

A Fellow, or an Associate being a man, residing in Toronto shall pay .....	\$2 00
A Fellow not residing in Toronto shall pay .....	1 00
Any other Associate shall pay .....	1 00

Provided, that an Associate elected on or after the first day of September shall, as his or her first fee, pay in full for the ensuing calendar year and, in addition, for each remaining month of the current year a sum in due proportion to the annual fee.

XVII. Any Fellow, or Associate at any time, all sums then due being first paid, may compound for his annual contributions by the payment of twenty dollars and become a Life Fellow, or a Life Associate. A Life Fellow, or a Life Associate subject to expulsion shall have his payment returned less the annual fees he would have had to pay had he been an ordinary member until the date of his expulsion.

XVIII. Every Fellow and every Associate shall respectively be held to be a member of the Society, and as such shall remain

liable to the payment of his annual contributions until he has either forfeited his claim or signified in writing his desire to resign, whereupon his name shall be erased from the Roll of Fellows or of Associates, as the case may be, but, notwithstanding this, every Fellow and every Associate shall continue liable for his annual contributions until he shall have discharged all sums, if any, due by him to the Society, and shall have returned all books or other property, if any, borrowed of the Society, or in his possession, or shall have made full compensation for the same if lost, injured or not forthcoming by a date to be fixed by Council.

XIX. Whenever a Fellow or an Associate shall be one year in arrear in the payment of his annual contributions, the Treasurer shall write a letter in Form No. 4 in the Appendix hereto and shall address and forward the same, registered, to the last known place of abode of such Fellow or Associate, together with a copy of the following By-law.

XX. Whenever a Fellow or an Associate of the Society shall be one year in arrear in the payment of his annual contributions he shall cease to enjoy the right of attending or voting at any meeting of the Society or the Council, if he be a member, or of assuming the title of Fellow or Associate of the Society, or of otherwise eligible, of holding or being elected to office, or of receiving the publications of the Society and other advantages thereof, until his arrears have been paid; and should the Treasurer report him to the Council as having become two years in arrears, as aforesaid, his name shall thereafter be posted up as that of a defaulter in the Library, and should his arrears be still unpaid at the end of two months from the date of the posting of his name, the Treasurer shall report the fact at the first convenient meeting of the Society, whereupon the chairman shall declare the said Fellow or Associate to be expelled from the Society for non-payment of his annual contributions.

OFFICERS.

XXI. The officers of the Society shall be chosen annually, and shall consist of a President, a First Vice-President, a Second Vice-President, a Treasurer, a Secretary, a Recorder, a Librarian and a Curator. If a vacancy occurs in any of the above mentioned offices, other than that of President, it may be filled for the remainder of the year by the Council, at a meeting of which notice has been given; the action of the Council in this behalf shall, however, be subject to ratification or revision by the Society, to which the said action shall be reported at the first meeting of the Society held after the vacancy has been so filled. If a

vacancy occur in the office of President, the First Vice-President shall thereupon become President, and the Second Vice-President shall become First Vice-President; the office of Second Vice-President shall be filled as above provided.

XXII. The officers of the Society for the ensuing year shall be elected at the last regular meeting of the Society held in each calendar year, and such meeting shall be known as "the Annual General Meeting." The officers shall be installed at the first regular meeting of the new year.

XXIII. On a convenient day prior to the last regular meeting of the Society but two in each calendar year the Council shall, after notice, meet and take into consideration the general state and welfare of the Society, especial regard being had to the necessity of choosing fit and proper persons for election as the officers and the members of the Council for the ensuing year. To this end, it shall prepare a list of the names of members eligible, in its opinion, for the positions for which it nominates them. This list, which may embrace as many names as the Council may think fit to submit, shall be reported to the Society at the next meeting thereof and shall be laid upon the table. The performance of this duty by the Council shall not deprive any two Fellows, or Associates of the privilege of nominating, at the said last meeting but two of the Society, any additional person or persons eligible for any office, but, except in the case of a proposed re-election, no nomination shall be made, or accepted, unless the nominators shall have first obtained the consent of their nominee. As soon as may be after the nominations have been completed, the Council shall cause the list to be printed, or typed as a ballot and to be distributed by mail to every Fellow and Associate of the Society. Any Fellow, or Associate not able to attend the Annual General Meeting may have his ballot counted thereat, providing it be signed by such Fellow, or Associate, and be received by the Recorder prior to the meeting being called to order. Each Fellow or Associate voting shall strike out the names for which he does not vote, and his ballot shall be counted in any particular in which it is not redundant or otherwise open to objection by the scrutineers appointed by the President to take and count the ballots.

#### THE COUNCIL.

XXIV. The Council shall consist of the officers of the Society mentioned in By-law XXI, and of three Associates to be chosen at the Annual General Meeting. Past-Presidents of the Society shall be Members of the Council *honoris causa*.

XXV. Subject to the approval and sanction of the Society, the Council shall be charged with the control and conduct of the business and monetary affairs of the Society. It shall be the peculiar province of the Council to relieve the Society as far as possible from the transaction of ordinary business and, for this purpose, it shall possess initiative of action and the right to submit to the Society any recommendation or proposal which to it shall seem to be proper.

XXVI. The Council shall meet at the call of the President, who may himself issue, or direct the Recorder to issue, the necessary notices. It shall be the duty of the President to summon a meeting whenever there shall appear to him to be sufficient business requiring attention. In his absence, or in case of his refusal to act, any three members of Council may issue or cause to be issued notices for an emergency meeting. The notices shall state clearly the reasons the Councillors have for calling the meeting, whereat shall be transacted no business other than that of which specific notice was given. Under no circumstances shall the notice for any meeting be less than one clear day. The quorum of Council shall be five. Questions shall be decided by a show of hands unless the yeas and nays are called for by two members, whereupon they shall be taken down.

XXVII. Subject to the sanction and approval of the Society first had and obtained, the Council may appoint, employ and remunerate such assistants as may be necessary for conducting the business of the Society, and may discharge such assistants when it thinks proper. The President may, in writing, suspend from office any such assistant, but shall report the fact to the Society at the first meeting thereafter held.

XXVIII. Minutes of the proceedings of each meeting of the Council shall be taken during their progress by the Recorder. The minutes shall be fairly entered as early as is convenient in the Minute Book of the Council, and, as the Official Report from Council, shall be read by the Recorder to the Society at the next ensuing meeting. Such Report shall be regarded as having been received and adopted by the Society if no exception thereto be taken before the close of the meeting at which the Report is read. If exception be formally taken by two members the Report shall not be considered as adopted unless and until it has been adopted upon a motion formally made and seconded for the purpose, and declared to be carried. Nothing in this By-law contained shall be construed as diminishing the inherent right of the Society to refer back, reject, amend, revise, or otherwise deal with any Report submitted to it by Council.

## ALTERING BY-LAWS.

XXIX. Whenever the Council may think it advisable to propose the enactment of any new By-law, or the alteration or repeal of any existing By-law, it shall recommend the same to the Society in a Report which shall be laid on the table until the next regular meeting of the Society, when it may be considered and acted upon, or a special general meeting may be convened for that purpose, the permission of the Society having been first had and obtained. The Society may at any time direct the Council to consider and report upon the expediency of enacting a new By-law, or of amending or repealing or otherwise dealing with one in force, and, if the Council make default in this respect, may itself, without further notice, take such action as appears to it to be proper in the premises.

## DUTY OF THE PRESIDENT OR PRESIDING OFFICER.

XXX. It shall be the duty of the President to take the chair; to keep order at all meetings of the Society and of the Council; to regulate their respective proceedings; to state and put questions according to the sense and intention of the meeting, and to carry into effect the By-laws of the Society.

XXXI. In the absence from a meeting of the President, one of the Vice-Presidents shall take the chair and conduct the business of the Society or Council; and in their absence, the meeting may choose any member present to take the chair at that meeting. For the time being, the chairman may exercise any of the ordinary powers of the President.

XXXII. The President shall not vote at any meeting of the Society or Council except where a casting vote is necessary to decide a question, in which case he shall give such casting vote.

XXXIII. As occasion requires, the President may nominate any committee other than a standing committee, and may appoint its chairman, and charge such committee with the duty of examining into and reporting upon any subject connected with the welfare, or work of the Society. The President shall ex-officio be a member of every committee, and may vote as such member unless he is in the chair, when he shall only exercise the right of giving, when necessary, a casting vote.

## THE TREASURER.

XXXIV. The Treasurer alone shall receive moneys due to the Society, and, subject to such rules as may be in force, pay moneys

due by the Society. He shall keep his accounts in a business-like manner, and shall submit any statement of the funds in his hands or respecting his accounts which may be called for by the Society or the Council; nothing herein contained shall be construed as in any degree depriving the Society of full control of its moneys.

XXXV. The Treasurer shall on receipt, deposit to the credit of the Society, in some chartered bank, to be approved of by the Society, all and any moneys which come into his possession as such Treasurer. He shall also see that his bank-book is kept entered up and be prepared to produce it when called upon to do so.

XXXVI. Whenever practicable, the Treasurer shall pay only by cheque, signed by himself and countersigned by the President, and drawn to the order of the payee. No sum shall be paid unless the Council has authorized the payment thereof. For every payment the Treasurer shall obtain a receipt and such vouchers as are procurable.

XXXVII. The Treasurer shall open and keep an account with every Fellow and Associate, and shall give receipts for fees received by him.

XXXVIII. The accounts of the Treasurer shall be audited annually, or whenever the Society shall so order, by two or more auditors chosen by the Society. No member of the Society shall be eligible for appointment as an auditor if he be interested excepting as such member in the receipts and disbursements of the Treasurer, which are to be the subject of such audit. The auditors shall report at the annual general meeting, or as directed, the particulars of the receipts and expenditures of the current year or other specified period, the balance in bank or otherwise on hand, and the general state of the funds and property of the Society. They shall also lay on the table a list of those Fellows and Associates, if any, who are in arrear for fees on the date of the annual meeting.

XXXIX. The Treasurer may, with the approbation of the Council, appoint a proper person to collect the arrears and the annual contributions of the Fellows and Associates. Such collector shall give security to the satisfaction of the Council for the faithful discharge of his duties.

## THE SECRETARY.

XI. It shall be the duty of the Secretary of the Society to conduct the entire official correspondence of the Society, and to

read all official communications to the Society at the first regular meeting after their receipt. He shall also keep copies of all letters written by him, and shall preserve and index all communications received by him. It shall be also his duty to see that letters are written, answered or otherwise dealt with in the manner the best interests of the Society require. Postages shall be supplied to him by the Treasurer as directed by Council.

#### THE RECORDER.

XLII. It shall be the duty of the Recorder to attend all meetings of the Society and of the Council; to take exact minutes of all the proceedings thereat; to cause them to be entered as early as possible in the proper book provided for that purpose, and, as required, to call meetings of the Society, or of the Council. It shall further be his duty at the ordinary meetings to read the minutes of the proceedings of the preceding meeting, and the report of Council, if any, and to report to the Treasurer the name of each candidate elected.

XLIII. The Recorder shall keep the Minute Books of the Society and the Council at the Library of the Society, so that they may be referred to when occasion requires.

#### THE EDITOR.

XLIII. The Council at its discretion may appoint an Editing Committee which may or may not wholly consist of members of Council, and also an Editor, whose business, subject to the control of the Committee and of the Council, shall be to arrange and issue the publications of the Society.

XLIV. It shall be the duty of the Editor to prepare and submit in writing estimates of the cost of publications, and, when instructed by Council, to obtain tenders for work to be done. He shall in no wise incur any liability for printing or engraving, and the like, unless and until he has been duly authorized to do so.

XLV. Every report or document the printing of which is estimated to entail an expenditure of \$10 or more, shall be offered to competition by tender, unless the Council otherwise directs by resolution to be reported to the Society.

#### THE LIBRARIAN.

XLVI. Subject to regulations approved by the Council, the Librarian shall have entire charge of and be responsible for the

safe-keeping and proper condition of the books and publications, maps, charts, photographs, pictures and like property of the Society. He shall report to the meetings of the Society the names of publications, donations, etc., received by him. The Librarian shall also take charge of the Exchange List of the Society, and shall oversee the distribution to exchanges and to members of the Society residing beyond the confines of the City of Toronto of the copies of the publications to which they are respectively entitled. Fellows and Associates of the Society residing in Toronto shall apply to the Librarian for their copies of the Transactions, and shall sign a roll acknowledging the receipt of the same. Disbursements necessary for the purpose of distribution shall be made by the Treasurer as directed by Council, and he with the Librarian, shall from time to time certify to the Council the sums expended for these purposes or any of them.

XLVII. The Librarian and his assistant, if he have one, shall see that the Rules governing the issue and return of books for circulation are obeyed, and it shall be their duty to report to Council any Fellow or Associate disregarding such Rules, and the Council may suspend the privileges of the Library in the case of any offending member of the Society.

XLVIII. For the purposes of better classification, the Library shall be divided into two sections, the one containing the works for circulation, the other the works of reference. Under no circumstances shall works of reference be taken from the Library without the knowledge and consent of the Librarian and the consent in writing of the President, and then only subject to such conditions as shall be imposed and accepted.

#### THE CURATOR.

XLIX. Subject to regulations approved by the Council, the Curator shall have entire charge of and be responsible for the safe-keeping and proper condition of the apparatus of the Society. On no account, without the permission of the President in writing, shall he use or permit the use of the apparatus of the Society elsewhere than on the premises of the Society. It shall also be his duty to report to the Council from time to time such information with respect to the property of the Society in his custody as should be in its possession. He shall also keep an exact and detailed list of the Society's property committed to his care. Under no circumstances shall the property of the Society be loaned unless the Council, or the President has signified approval in writing, and the person to whom the loan is to be made has signed a

19

The regular meeting of the Toronto astronomical Society held Oct 16 1900 in the Canadian Institute

The President Mr Geo Chumston occupied the chair

The minutes of the previous meeting were read and confirmed.

Mr Arthur Harvey presented a design for ~~the~~ a seal for the Society. The President stated that he was prepared to receive others from members who wished to offer designs and that these would be duly considered

Mr Atkinson moved that members be invited to hand in lists of books which were thought worthy of being considered for purchase as additions to the Society's library. This was agreeable to the meeting.

A letter was read from Prof Buchanane who had very kindly forwarded a set of slides of the next eclipse. These were inspected daily.

The President addressed the meeting on the subject of the new constitution. After some discussion of the clause relating to nomination of officers the constitution as printed was laid before the meeting and was adopted.

Prof. A. J. Bell of Victoria University was duly elected an active member of the society.

The Librarian reported the receipt of presents and exchanges.

Mr. Atkinson read some notes on the predictions for the ensuing fortnight. The President called the attention of the members specially to the opportunity which they now had for seeing Venus in daylight. At nine o'clock in the morning the planet could be easily picked up and followed with the unaided eye.

Observations were reported by Mr. Hawley, Mr. Miller and Mr. Atkinson, and Mr. Elvins. Mr. Elvins had drawn a diagram showing the valley which leads up to Herodotus on the lunar surface and stated that he had been able recently to see this valley right up to the crater. At other times he had



not been able to see it and on many drawings made of this position the valley was not shown.

Mr. Miller ~~observed~~ ~~that~~ ~~he~~ ~~had~~ ~~observed~~ ~~the~~ ~~star~~ ~~and~~ ~~had~~ ~~noted~~ ~~its~~ ~~colour~~ ~~as~~ ~~orange~~ ~~the~~ ~~star~~ ~~having~~ ~~a~~ ~~pale~~ ~~green~~ ~~companion~~ ~~of~~ ~~the~~ ~~10<sup>th</sup>~~ ~~mag~~ ~~and~~ ~~at~~ ~~30"~~ ~~distance~~. The spectrum was of the 3<sup>rd</sup> type, showing deep flutings. ~~Mr. Miller noted~~ ~~the~~ ~~presence~~ ~~of~~ ~~the~~

It was announced that on the evening of Tuesday next an informal meeting would be held for telescopic work at Harbor or Coll. Park, at the request of the ladies of the Kindergarten school.

~~Mr. D. J. H.~~ The President then announced that Mr. Elvins had kindly allowed his paper to stand over in the mean time in order to give place to Mr. D. J. Howell who had procured the use of a large number of slides illustrating colour photography.

Here Mr. Howell then proceeded to show. The collection was a varied one but every slide ~~was~~ <sup>shown</sup> beautifully on the screen. Mr. Howell gave a brief review of the method of making the slides and showed how defects would creep in some times.

At the close of the exhibition of the pictures the President thanked Mr Howell in the name of the members for the great pains he had taken to make the evening pleasant and profitable. The slides could not have been had except through Mr Howell, and for that

The meeting then

Before closing Mr Searcy stated that she had received the annual of the Magtiff observatory from Prof Lowell

Mr Hawey laid on the table, some memoranda which he desired needed as being a proof of the coincidence of the aurora in the north with the phenomenon in the south.

The meeting then adjourned & met Oct 30

and  
H. P. P.

John Lindsay  
Recorder

L. 37° 48' 05" N.  
lon. 122° 16' 38".25 W.

Chabot Observatory

Oakland, California, Sept 29 <sup>1900</sup> 189

G E Lumsden F R A S  
President Toronto Astro. Socy.  
Toronto

Wrote  
12 Nov 500

Dear sir. I have received yours of 24th inst and will send you by express with in a few days a set of slides for the Society. Of course they are sent free, but the charges for sending will go "collector", but this will not amount to much.

I wish to say that some of these are second quality, the first class ones having been sent out, and my dark room "is not" an account of changes in the building now being made, so that both eyes to photographic defects in the slides.

The method is too complicated to explain briefly, but full details are to be published in the forth coming Report of the Lick Observatory. although I fear that the death of the Director, Dr Keeler may delay it.

Lat.  $37^{\circ} 48' 05''$  N.  
Lon.  $122^{\circ} 16' 38''.25$  W.

## Chabot Observatory

Oakland, California,

189

The slides all have labels giving the exposures the negatives receive counting <sup>from</sup> center of Sun. The exposures at 16', or Moon's edge may be taken as correct within in 10% of the time on the label, or, practically correct.

No 1 shows chromosphere <sup>over</sup> under exposed, the extreme inner corona under exposed, and the prominences about right.

No 5 was made in the ordinary way  
No 6 was made with a duplicate lens during the same interval <sup>as No 5</sup> receiving various exposures and is strictly comparable. The other will explain themselves, being either enlargements or reductions. I am somewhat ashamed to send you No 10, as, when well done <sup>it</sup> is a most effective slide. Enlarged 6 diameters. I also inclose an extra ~~one~~ No 1 and 6 for your self.

I would be glad to receive anything of your own <sup>and</sup> also your opinion of the merits of my own work.

Very truly Yours  
Charles Beverly Haller

The regular meeting of the  
Astronomical Society held  
Oct 30<sup>th</sup> 1900 in the Canadian  
Institute

The President Mr Geo E Hinshelwood  
occupied the chair

The minutes of the previous  
meeting were read and  
approved

Letter was read from Mr Stupart  
asking the Society to furnish a further  
supply of cards for the Earth current  
reports. The printing of another lot  
was authorized.

The circular from alliphany inviting  
the public to be present at the  
laying of the corner stone of the  
new observatory which Mr Beakhear  
had been chiefly instrumental in  
founding.

The president reminded the society  
that designs for a seal would  
be gladly received for consideration

It was announced that a meeting  
of council would be held on  
Saturday Nov 3<sup>rd</sup> at 9 pm to  
consider the purchase of books  
and the publication of the  
report.

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Mr Atkinson stated that an informal meeting would be held on next Friday evening.

Mr Joseph Pope of Acton was duly elected an associate member of the Society.

The Librarian reported the receipt of exchanges & present two volumes of Chauvenet's "Practical Astronomy" were laid on the table, these having been refused at a previous meeting as being for sale.

It was moved by Mr Harding seconded by Mr Miller that the volumes be bought at the price asked  $2^{00}$

The predictions for November were written, on the blackboard by Mr Atkinson these would also be printed in the Globe

Observations of sun spots were reported by <sup>the President and</sup> Mr Atkinson and

Dr Wadsworth of Toronto being present was asked to address the meeting

The doctor <sup>said</sup> stated that in his location there was a constant interest in astronomy being taken - they were working there in a humble way but very actively

Some pictures were then <sup>projected</sup> ~~shown~~ on the screen by Mr. Thruell. These included some slides of the recent eclipse of the sun which had been forwarded by Prof. Buerckhalter.

The President ~~then~~ ~~was~~ ~~to~~ ~~be~~ ~~present~~ ~~at~~ ~~the~~ ~~meeting~~ ~~and~~ ~~he~~ ~~stayed~~ ~~to~~ ~~attend~~ ~~for~~ ~~the~~ ~~evening~~

The President then asked Mr. Anderson to take chair and Mr. Miller was called upon & read a paper on "Earth".

After a few remarks on the importance of us of what is found on the surface of the Earth and very near to it, Mr. Miller conducted a series of experiments showing the value of the properties of the constituents of the Earth that are readily procurable.

The experiments were successfully performed and proved instructive.

The chairman presented the thanks of the meeting to Mr. Miller for the pains he had taken to make the evening enjoyable.

It was announced that the next meeting would be held Nov 13<sup>th</sup> and the meeting is adjourned.

G. H. P.

This kind day  
Kearney

The regular meeting of the  
Toronto Astronomical Society  
held November 13<sup>th</sup> 1900 in  
the Canadian Institute

The President in the chair  
The minutes of the previous meeting  
were read and approved

Dr. Brashear had forwarded  
a paper <sup>containing</sup> ~~with~~ details of the laying  
of the corner stone of the Allegheny  
Observatory.

The President reported the meeting  
held at the Normal School ~~on the previous~~  
when several members of the society  
were present and an enjoyable evening  
spent at the telescopes which had  
been brought to the grounds

A letter from the Steinbeger (Hendry) Co  
was read offering a telescope for sale  
that was referred to the council.

Also a letter from H. S. Davis was  
read asking for reports of the  
Society's transactions

Mr R Lyson 5 Harbord St Toronto  
was nominated for associate by  
Mr J E Maghee and Mr J Hendry

The corresponding secretary read  
communications from Mr W F Denning  
of Hall and secretary of the Legislative  
Library of Quebec



Mr Deming had forwarded two short papers on shooting stars and Jupiter. Mr Hale had promised a copy of the photo of the moon taken in the Judd telescope.

The Librarian reported the receipt of presents and exchanges. Mr Elvin called attention to an article in Knowledge giving diagrams & illustration of the moon. Cairns' monoplane telescope.

Under observations Mr Lindsay reported having observed Schuster's valley on the lunar surface when the moon was just 12.5 days old. The president made a sketch of this feature on the blackboard and pointed out the peculiarities of the formation.

Mr J. E. Mayhew presented a drawing of the great ring plain. Clairns and explained his method of sketching.

Mr Miller called attention to the fact that the constellation Centaur is now well placed for observation and that it contained many variable stars.

~~It was announced that~~

Mr Lindsay then read a paper on the Recurrence of Eclipses dealing with the cycle of the Saros and illustrating the subject by examples leading up to the total solar eclipse.

of August 30<sup>th</sup> 1905 which would  
be visible in the northern part of  
Canada.

Two diagrams taken from Prof Todd  
book of Solar Eclipses had been  
reproduced on lantern slides by  
Mr Howard who projected the  
slides on the screen. These  
illustrated the occurrence of the solar  
eclipses throughout the 19<sup>th</sup> & 20<sup>th</sup> centuries.

It was announced that the next  
meeting would be held in November  
19<sup>th</sup> when Mr J. C. Marshall would  
read a paper on "Some contributions  
of astronomy to historical life and thought".  
The meeting then adjourned.

app'd  
G. H. P.

Her Kue Day  
Lecture

A meeting of the Council  
of the Toronto Astronomical  
Society was held Nov 17<sup>th</sup>  
The President occupied the chair

The following ~~recommendations~~  
items of expenditure were recom-  
mended

For publication of transactions	100
"    additions to library	50
"    Printing	25
"    Lenten plates	25

In accordance with section 23  
of the Constitution and Bylaws  
the following list of names ~~was~~  
~~recommended~~ of members eligible  
for the various offices was prepared  
and to be brought before the Society

Hon. President	Hon. R. Horscott
President	Gen. E. Curran
1 <sup>st</sup> Vice President	R. F. Stupart
2 <sup>nd</sup> "      "	C. A. Chant
Treasurer	Chas. R. Spaulding
Corresponding Secy	W. B. Morrison
Recorder	J. E. Magbell
Librarian	Z. M. Collins
Secretary	D. J. Howell
Member of Council	
A. F. Miller	
J. S. Ridout	
J. Phillips	

Editorial Committee to deal  
with the preparation of the directions  
for 1900. Messrs Redout & Dupont  
Lundsey.

Thos Lundsey  
Boston

The regular meeting of the  
Toronto Astronomical Society  
held in the Canadian  
Institute Nov 27 1900

The President M G E  
Lumden occupied  
the chair

The minutes of the <sup>previous</sup> ~~regular~~  
meeting were read and  
confirmed

Letters were read from  
Mr J R Robertson

Herman S David

Secretary of the Frazer Society

Dr Brashear

the Secretary of the F Society  
presented the ~~thanks~~ <sup>thanks</sup> of that  
Society to the President and  
members of the Astron. Society  
for the enjoyable evening  
of Oct 16<sup>th</sup>

Dr Brashear had written on the  
subject of Popular Lectures

The report of the Council  
meeting of Nov 17<sup>th</sup> was read  
the ~~recommendations~~ <sup>recommendations</sup>  
were on motion approved

The recommendation of Messrs  
Kidson, Mayhew & Lindsay as Editorial  
Committee was on motion approved

The recommendation of the Council in the matter of nominations for the various offices for 1901 was read. Additions were made ~~by members~~ on motion and the final list stood as follows:

Hon President	Hon R Harcourt
President	M <sup>r</sup> Geo Edmunds
1 <sup>st</sup> V. Pres	R F Stupart
2 <sup>nd</sup> V Pres	C. A. Chant
Treasurer	Chas P Sharning
Cor Secy.	W B Munson
Recorder	J E Maxwell
Librarian	Z M Collier
Curator	D J Howell
members of Council	J. H. Clark
at middle	
J. H. Clark	
J. B. Kidwell	
R. A. Johnson	
J. W. Weatherbee	

Miss Laura Fawcett was nominated as an associate of the Society by Miss E. A. Dent and Miss L. M. Dent

Observations were discussed by several members. M<sup>r</sup> Weatherbee making a diagram of the motion, I was out calling attention of observers to that point.

The President then announced that Mr. Maybell would read his paper on "Astronomy in relation to practical life and thought"

The paper was listened to with marked attention and was thoroughly appreciated. Some views of nebulae were projected on the screen at the close by Mr. Howell.

The meeting then adjourned to meet Dec 11 when Mr. J. A. Paterson would read a paper on "Art and astronomy"

John Lundberg  
Recorder

v)

Meeting of the Toronto  
Astronomical Society  
Wed Dec 11<sup>th</sup> 1900 in  
the Canadian Institute

The President Mr Geo.  
Chamberlain occupied  
the chair

The minutes of the previous  
meeting were read and em-  
phased

Letter from Popular Astronomy  
offering the use of two plates  
for the transactions

The Librarian read the report  
of presents received since  
last meeting

The recorder read the various  
tenders received for printing the  
Transactions. These were referred  
to the editorial committee

The President then stated  
that a slight change in  
the order of business had  
been suggested and in  
accordance would call  
upon Mr Patterson for the  
paper of the evening.



The paper "Art and Astronomy" was then read by Mr. Peterson and was most heartily appreciated. The connection between art and astronomy was dealt upon in minute detail. A <sup>short</sup> discussion ensued several members expressing the very great pleasure they had experienced in ~~the~~ hearing the paper.

The usual business was then taken up

~~Miss~~  
Miss Laura Fawcett of Toronto was duly elected an associate of the Society.

The following gentlemen named were nominated for associates.

Res. J. B. Street - Modem LL.D. Toronto  
 Rector of Trinity College  
 Harold King Esq of Fort Point, Montreal

Under observation. Mr. A. C. Miller reported that Mira Ceti was now quite invisible, and called attention to the interesting character of the observation of a star having apparently disappeared.

Other observations were reported by the President Mr. Weatherman and Mr. Lindsay

Mr. Elerius presented a diagram showing how in his opinion the magic numbers of the ancients had been obtained. Applying the method to the quadrature of the circle it was shown that the resulting rule was that the square on  $\frac{16}{15}$  of the <sup>diameter</sup> was very nearly equal to the area of the circle.

Under notes and queries Mr. Hanning asked for an answer to the question what would be the weight of a mass given at the surface of the Earth if it were weighed in a spring balance at a height of 1 mile above the surface.

The meeting then adjourned to meet Dec 27<sup>th</sup> when a paper on "Popularizing Astronomy" would be read by Mr. J. R. Chrysler

and  
 G. E. ...  
 P. ...

The Sunday  
 Reader

MEMBERS OF COUNCIL  
MEMBERS, HONORIS CAUSA

Mr. Larratt W. Smith Q.C., D.C.L. Mr John A. Paterson, M.A.  
Mr. Arthur Harvey, F. R. S.C., Past Presidents.

\* MEMBERS TO BE ELECTED

The Rev. Robert Atkinson  
Mr. A. F. Miller  
Mr. John Phillips  
Captain John G. Ridout  
Mr. J. H. Weatherbee.

SIGNED.....

\*Not more than three candidates can be voted for; otherwise the ballot will be spoiled and cannot be counted.

## Toronto Astronomical Society

### MEMORANDUM

Toronto, December 21st, 1900

Herewith you will receive a copy of the Constitution and By-Laws of the Society, as adopted by it on the 16th of October, and also of the Roll of Membership, which please hand or mail to me at your early convenience.

Enclosed herewith you will find a paper to be used at the meeting of the Society, on Thursday the 27th instant, for the election of **three Members of Council**. There being five candidates duly nominated, you will please strike out two of the names, and either hand in the paper to the Scrutineers, or if you are unable to be present, mail or send it to the Recorder at the Canadian Institute. If it reaches that officer before the meeting is called to order it will be entitled to be counted **if signed by you**. It need not be signed if you are able to be present and vote.

CHAS. P. SPARLING.

Treasurer.

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## Toronto Astronomical Society

### BALLOT PAPER FOR 1901

#### OFFICERS.

Honorary President—Hon. R. Harcourt, Q.C., Minister of Education.  
President—Mr. G. E. Lumsden, F. R. A. S.  
First Vice-President—Mr. R. F. Stupart, Director of the Toronto Observatory.  
Second Vice-President—Mr. C. A. Chant, B.A., Lecturer in Physics, Toronto University.  
Treasurer—Mr. Chas. P. Sparling.  
Secretary—Mr. W. Balfour Musson.  
Recorder—Mr. J. Edward Maybee.  
Librarian—Mr. Z. M. Collins.  
Curator—Mr. D. J. Howell.

The regular meeting of  
The Toronto Astronomical  
Society held Dec 7<sup>th</sup> 1900  
in the Canadian Institute

The President Mr Geo  
E Lumsden occupied the  
Chair

The President reported  
that the tender for printing  
the Transactions made by the  
Carwell Co had been accepted  
and that the work would go  
on; it had not yet been  
settled as to how many copies  
would be taken. A reduction in  
the number of copies from the 500  
named would mean a corresponding  
reduction in price

The election of officers was  
then proceeded with Mr Z. M.  
Collins & Mr Sparling acting as  
scrutineers. They reported the result  
and the President  
announced the  
newly elected  
members of the Council  
following as officers for 1901

## OFFICERS.

Honorary President—Hon. R. Harcourt, Q.C., Minister of Education.  
President—Mr. G. E. Lumsden, F. R. A. S.  
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University.  
Treasurer—Mr. Chas. P. Sparling.  
Secretary—Mr. W. Balfour Musson.  
Recorder—Mr. J. Edward Maybee.  
Librarian—Mr. Z. M. Collins.  
Curator—Mr. D. J. Howell.

Council  
A. F. Meier  
S. R. Howitt  
Rev. R. Robinson

Rev. J. C. Street - Markham D.D.  
was duly elected an associate  
of the Society

Mr Harold King of Fort Point  
Markham was <sup>also</sup> duly elected  
an associate of the Society

Mr R. W. King 503 Markham St  
Toronto was nominated  
as associate by Mr A. Elving  
and Mr G. E. Lumsden

Dr P. H. Bryce M.A. of  
Biacraftale was nominated  
for associate by Mr  
G. E. Lumsden and ~~Mr~~ Rev.  
R. Atkinson

The predictions for the  
next month were put  
on the blackboard by  
Mr Atkinson.

The President then called  
upon Mr Phillips who  
read a short paper  
on "The Genesis of the  
Moon on the theory of  
Vertical Projection and Tidal  
Action"

Mr L. R. Clougher was then called upon to read his address "The experiences of an amateur in popularizing astronomy"

The Librarian's report of presents and the paper proved of much interest Mr Clougher giving a very full account of all the little troubles with which a popular lecturer must contend, and his happy way of meeting them. After thanking Mr Clougher for his address the president continued the business of the meeting.

The Librarian's report of presents and exchanges was read. Mr Davis called attention to "Knowledge" and "The English Mechanic" in both of which further complimentary references were made to the work of the Messrs. Collins.

Mr Spalding then read the financial statement showing a balance of cash in Bank and on hand of \$294.64

This was adopted as satisfactory and the president conveyed the thanks of the meeting to Mr Spalding for the trouble he had at all times taken in his department.

under observation. Mr. Elwin called attention to the appearance of Lycho on the moon as seen before and at full moon, illustrating <sup>his remarks</sup> by a diagram on the blackboard.

Mr. Atkinson had placed on the blackboard a full list of coming phenomena worthy of observation. He called attention to the fact that on Jan 1<sup>st</sup> 1901 it would be just 100 years since the minor planet Ceres was discovered.

Before adjournment. Mr. Spaulding moved the thanks of the society to the retiring officers, to which Mr. Phillips and Mr. Lindsay replied.

The meeting then adjourned to meet on call during the second week in January when the President would address the society on the subject of "The threshold of the new century".

~~Respectfully~~

Approved,

G. F. Wood,  
President.

The Lindsay  
secretary