

4th Annual MeetingJuly 8th 1894.

The 4th Annual Meeting of the Astronomical & Physical Society of Toronto was held at their rooms 19 McMillan St. Jan 8 1894.

J. A. Paterson M.A.
Chairman

M^r John A. Paterson M.A. Vice President occupied the chair; the attendance was large, of lady and gentlemen members and friends.

Minutes read & confirmed

The minutes of the previous meeting were read and confirmed.

Motions

In pursuance of notice given M^r J. Todhunter moved seconded by M^r J. Lindsay

that the fee for membership in this society be as follows:

For gentlemen as before

For ladies, Annual membership ~~7⁰⁰~~

Life membership 10⁰⁰

Amendment

M^r C. P. Sparling moved in amendment seconded by M^r A. Aronsberg that the life membership for gentlemen be made 10⁰⁰ for ladies 5⁰⁰.

Membership Fees.

M^r Arthur Harvey addressed the meeting on the subject of fees in societies of this kind and held that a reduction in the life membership fee would not in the end be to the advantage of this society. He was in favour however of reducing the annual membership for ladies.

Motions

Mr G. G. Pursey also spoke in favour of the motion but against the amendment.

Mr Lindsay said that Mr Sparling's object was to better the condition of the Society financially, but ^{thought} there was no immediate ~~danger~~ ^{trouble} off, for the affairs of the Society were really ~~on~~ an excellent footing and this was largely due to the careful management of Mr Lodhwick and Mr Sparling himself.

The general opinion being adverse to the reduction, Mr Sparling withdrew his motion.

The original motion was then put to the meeting and carried unanimously.

Mr Dewar
Motion Withdrawn

Mr Dewar addressed the chair with reference to his notice of motion and stated that he had decided on consideration to withdraw it.

Motion

Mr G. G. Pursey moved
seconded by Mr G. G. Pursey
that Mr A. F. Miller, Mr A. Aronberg
Mr C. A. Chant and the mover be
a special committee to consider and
report upon the propriety of petitioning
the Dominion Government to reduce
or remove the duty upon astron-
omical apparatus not made in Canada.
This was carried.

Elections

In accordance with the motion passed at the previous meeting the recording secretary nominated the following officers for 1894

Honorary President	Hon G.W. Ross LL.D.
President	Chas. Carpmael M.A. F.R.A.S.
Vice Presidents	{ Lanact W Smith 2.C.D.C.L. John A Paterson M.A.
Treasurer	Jos Todhunter
Assr Treas	Miss S.L. Taylor
Corresponding Secty.	Geo E Lumsden
Recording Secty	C.P. Spauling
Assr Rec. Secty	Miss A.A. Gray
Librarian	G.G. Pursey
assr. lib.	Miss Jane Pursey

Council

The officers of the Society together with

Mr A.F. Miller
 Mr A. Harvey
 Mr A. Pliers
 Dr E.A. Meredith
 Mr D.J. Howell

The election of the above named officers was made unanimous.

A letter was here read from Dr Lanact Smith who asked the Society to excuse him if he ~~was~~ ^{should} not be able to attend the meetings as regularly ~~that~~ he would wish. Mr Spauling stated that he had seen Dr Smith before coming to the meeting and had assured him that the Society would make allowance for any cause which might prevent his

Letter from
 Dr L.W. Smith

attendance, while regretting that such should at any time exist. This was the general expression of the meeting.

Elections
F. H. Young M.A.
Associate
Member

A letter was read from Mr F H Young M.A. who was desirous of becoming an associate member and who enclosed the annual fee. Mr Young was declared elected.

~~Mr R. Dewar moved
seconded by Mr G. G. P~~

Mr Wm Stoddart
elected
Active Member

Mr Wm Stoddart Desoronto, Ont was nominated for active membership by Mr A Elvins and Mr R. Dewar.

D. S. P. Langley
elected
Honorary Member

Mr A Harvey seconded by Mr A Elvins moved that Dr S. P. Langley, Secretary of the Smithsonian Institute be declared an Honorary member of this Society. This was carried.

D. Jas. Keeler
elected
Corresponding
Member.

Mr A Elvins moved seconded by Mr G. G. Pursey that Dr James Keeler, Director of the Allegheny Observatory be declared elected a corresponding member of this Society. This was carried.

A. E. C. Pickering
elected
Honorary Member

Mr G. G. Pury seconded by
Mr Lindsay moved
that Dr E. C. Pickering director of
Harvard College Observatory be
declared elected an Honorary
member of this Society
This was carried.

The movers and seconders of the above
called attention to the high standing
of the gentlemen, just elected, in
the scientific world and their un-
varying courtesy to this Society

Motion
Thanks to
H. Journals
Press.

Mr Dewar moved, seconded by
Mr G. G. Pury,
that the thanks of this Society are
tendered to the Globe, Mail and
Empire in recognition of the
invaluable service rendered by
them during the past year in
inserting notices, articles &c
pertaining to the Society.
This was carried.

Librarian's
Report.

Mr Pury reported the receipt of
the following.
J. W. Webb's "Celestial Objects" vol. 1. from
the publishers
"Vastu forces in astronomy" from the
author C. W. Tinsley of Columbus Ind.
Journal of the S. A. Socn.
Proceedings Astron. Socy. Pacific
From an unknown member through
Mr Lumsden were received,

Engravings of the hick and the
jerkes telescopes.

Treasurers
Report.

The chairman having called for
the officers annual reports
Mr J Loshunter presented the
following statement of the
finances of the society:

Balance on hand Jan 1893	57.29	
Membership Fee	150.00	
Govt. Grant	2000.00	
Interest on deposit	<u>1.60</u>	388.89

Disbursements to date		<u>259.86</u>
Balance on hand		129.03

In presenting the report Mr Loshunter
said that the result was encouraging
a still larger revenue could be used
advantageously.

He called attention to many objects
the society has still in view and
hoped that there might soon be
seen the nucleus of an observatory.
A great deal of astronomical and
physical apparatus were already held,
and had been valued at the goodly
sum of \$1000⁰⁰.

These were being constantly added to
by donations and purchase.

Entire satisfaction was unanimously
expressed at the ^{sound} favorable condition
of the society's finances, due to Mr
Loshunter's careful management.

Secretary's Report.

Mr Spurling reported, that there had been held throughout the year 25 meetings with an average attendance of 23 members. The method of sending announcements by post card had been discontinued and cards showing the dates of meetings for some months to come had been issued to all. The change had been quite satisfactory.

Phenomena

Miss A. A. Gray then read some announcements of phenomena to be observed during January.

The Wilson Telescope

Mr Lindsay reported having tried the non-achromatic telescope which Mr Lumden had had fitted up in a very simple manner, and said there would be no difficulty in using it, ^{on the sun} as Mr Miller had explained. Even on Jupiter there was some work might be done with such an instrument. He said however that the members who might fit up such instruments were not to expect any such performance as from an achromatic telescope, even of low power.

Method of Cutting Spectacle Lenses

Mr Aaronsberg showed a method of cutting spectacle lenses round and said he would furnish them to any member desiring such.

Aurora visible

Jan 3/94

A report was received from Dr Larratt Smith of the aurora visible here on Wednesday Jan 3 at about 6²⁰ p.m. Miss Wickett had also observed this

and Mr J Copland had sent
an account of it which was read.

Mr Hollingworth of Muskoda
had sent his report of observations
of the aurora etc.

Mr Elvins read some extracts;
it appeared that the snowfall had
been excessive, 67 inches being the
fall for December.

Mr Hawley remarked that the
snow this year had been very
local, some places having had
great fall, others but little.

Mr Pusey reported ~~having~~ that
the aurora of Jan 3 had been
observed at Marchant.

He also desired to call attention
to an extract he had read from
Mr Tinsley's book just received
and asked whether ~~as~~ a rotating
body would impart to a body it
might throw off, a retrograde or
direct motion.

Mr Hull explained the accepted
theory and an extract was read
from Dr Morrison's paper on Solar
Heat bearing on the question.

~~Mr Patterson~~

Mr Patterson then addressed the
meeting, thanking the society for
the honour of election to vice-presidency,
and stated that he would read what
he had prepared as a review of the
events of the past year.

Mr
J. A. Patterson's
Address.

Mr. Paterson's address was an eloquent plea for the study of science followed by a recital of some of the recent additions to astronomical knowledge. The discoveries of Prof Pickering in Peru were referred to at some length and the great work of Prof Chandler in latitude observations was also sketched, together with many other items of interest.

Mr. M. Turnbull's
Address.

At the conclusion of the paper Mr. M. Turnbull addressed the meeting and congratulated the society upon having such a member as Mr. Paterson; he was sure the close study displayed by the address and the eloquent language in which it was couched would be appreciated most heartily, and moved an expression of thanks to Mr. Paterson.

Mr. Spauling seconded the motion, and rising, addressed the chairman on behalf of the meeting which most enthusiastically endorsed Mr. Turnbull's remarks.

Announcements.

Mr. Paterson thanked the meeting for the kind expressions of ~~appreciation~~ appreciation.

Mr. Lumsden then proposed that the next meeting be devoted to the study of Jupiter and ~~any other~~ Miss Wildes and Miss Gray, Mr. Ellis and Mr. Musson were asked to contribute short papers. It was also understood that any member desiring to take part would have

an opportunity to do so.
There being no further business
the meeting adjourned till Jan 23rd
1894.

Lamar H. Smith

Chairman

Chas. Spaulding
Rec. Secy

1st Reg. Meeting
Jan 23rd 1894

The first regular meeting of the
Astronomical and Physical Society was
held at the rooms 19 McGill st
Jan 23 1894

D. H. W. Smith
Chairman

The chair was occupied by J. Harvatt
W. Smith L.C. Vice-president.

minutes

The minutes of the previous meeting
were read and confirmed after
which the chairman thanked the
Society for the honour of re-election
and assured them that he would
endeavour to attend the meetings
as regularly as possible, and continue
the interest he had always taken in
the work of the society.

Chairman's remarks

The following gentlemen were elected
members of the Society.

* Active members

Prof. C. H. Mead P.R.S.C. Montreal
Dr. J. H. Collinson B.A. U.C. U.C. U.C.
Active member

Honorary

Corresponding

E. W. Maunder F.R.S. London Eng. Corresponding member
Sir R. S. Ball M.A. Cambridge Eng. Corresponding member
Geo. H. Darwin M.A. Cambridge Eng. Honorary member
Dr. H. C. Vogel Rotterdam Germany Honorary member
William A. Rogers Colby University Waterville Corresponding member
Rev. J. E. Espin Law Hall England Corresponding member

Library

Mr Pursey reported the receipts of publications of Astronomical Society of the Pacific,
 also numbers of Astronomy and Astro Physics through Mr Arousberg.

Observations

Mr A. F. Miller reported some observations of sun spots; Mr Lumsden described the work he had been able to do with the non-achromatic telescope he had had constructed.

Dr Watson reported at some length his observations of Saturn Mars and Uranus, calling attention to the great beauty of the ring system of Saturn; the earth being at an elevation of 14° above the plane of the ring the conditions were very favourable. He had seen the division of the ring very clearly.

Referring to Venus Dr Watson said that it would be an interesting observation to note just how near to the Sun the planet may be seen and asked the members to observe as the planet approached inferior conjunction.

Sir Adam Wilson
 Telescope

A proposal in regard to the housing of the Sir Adam Wilson telescope was referred to the council.

Announcements

The chairman announced that several papers had been prepared by members on the subject of Jupiter and called first upon Mr Ellis.

Papers
on Jupiter.

Mr Ellis's paper dealt with the atmosphere of Jupiter, and occasioned some discussion, during which Mr Miller in answer to a question asked by Mr Harvey stated that there was no direct evidence of the presence of oxygen in the atmosphere of Jupiter.

Mr Elvins then followed with some interesting remarks upon Jupiter's satellites and showed a diagram illustrating the ^{respective} distances from the planet.

Mr Harvey continued the subject of the satellites and gave the law of Gaussius by which that astronomer had long ago come to the conclusion that Jupiter must have six satellites.

Mr Lindray followed with some remarks upon Jupiter's density, and ventured the theory that Jupiter was not composed of the same elements as the earth.

Dr Watson then described his telescopic work upon the planet at the opposition of 1892 and also of ~~that~~ 1893. He stated that he could not now see the red spot upon the disc of Jupiter.

Mr Lumsden had prepared a short paper on the "Telescopic appearance of Jupiter" but wished to defer the reading to another evening. He remarked in reference to the red spot that the indentation in the belt one of the belts of Jupiter was plainly visible and

should where the red spot was.

M^r Musson's paper dealt with the mythology of Jupiter and called attention to the difficulty in determining just how and when the planet was named by the ancients.

M^r Savigny read a short paper sketching some of the conditions under which inhabitants of Jupiter if there were such would exist. Dr Smith proposed M^r Savigny for membership, seconded by M^r Spaulding, moving also the suspension of the rules. M^r Savigny was thereupon declared elected an actual member.

It was announced that at the next meeting to be held Feb 6, M^r Joseph Allen would by invitation read a paper on Energy.

M^r Lumsden referring to the honor conferred upon the Society by the distinguished men who had consented to accept corresponding & honorary member, moved that the elections of this evening be taken in connection with the annual meeting and that the name be placed upon the list for 1893. This was carried unanimously.

Chas. Spaulding
Rec. Secy

Chairman Arthur Tarnsey

Election

next paper

Referring
elections back

2nd Reg. Meeting
Feb'y 6th 1894

Mr. A. Harvey
Chairman

The second regular meeting of the Astronomical & Physical Society was held Feb'y 6th 1894 at the rooms 19 McGill St. Toronto. Members present 25. Mr Arthur Harvey occupied the chair.

minutes

The minutes of the previous meeting were read and confirmed

D. Watson's
Proposal

Referring to D Watson's proposal that the members should carefully watch Venus as conjunction approached, Mr Lindsay stated that the planet had been seen on that evening, the 5th, and the members might report at the next meeting how often it had been seen in the intervening time.

Communications

Communications were read from Mr. Otto Struve accepting Honorary membership in this Society; From Mr J. E. Gore asking permission to publish a paper which he had formerly written for this Society. From Dr Sanford Fleming in relation to the proposed change in time reckoning; Dr Fleming wrote that all mariners were favourable to the change; he remarked also that while in the Southern hemisphere he had been disappointed in the appearance of the Southern Cross so

far as its being an object of beauty was concerned.

Mr J Van Sommer wished to vindicate the claim of the well known constellation of the South to beauty and was surprised that any one should fail to remark its glorious appearance. He said however that seeing the constellation low down in the horizon detracted from its beauty.

On motion of Mr R. B. Ellis seconded by Mr Lindsay permission was granted to Mr Gore to use the papers contributed to this society in his forthcoming volume of essays

Phenomena.

Mr G. E. Lumsden read a list of some phenomena to be observed during the next two weeks and suggested that it would be convenient to have a black board in the room upon which matters of this kind might be at times written.

The question of procuring a blackboard was referred to the council.

Observations

Mr Elvins briefly reported his observations of the sun and Venus.

Announcement

The chairman then introduced Mr Joseph Allen who had prepared a paper on "Force and Energy", outlining the theories of Dynamics advanced by Mr Grant Allen.

Mr. Grant Allen's Paper on Force Energy and the paper was listened to with the greatest attention throughout and at the close Mr. J. M. Clark referred to the able manner in which Mr. Allen had discussed his subject and moved that the thanks of the Society be tendered him. Mr. Elvins seconded the motion which was carried unanimously.

Vote of Thanks to Mr. Allen
The chairman rose to thank Mr. Allen for his paper and proposed that it be fully discussed by ^{such} ~~the~~ members as were interested in the very important subject of "Energy"

Announcement
As the hour was late Mr. J. M. Clark proposed that the next meeting be taken up with such discussion and that the members generally be invited to prepare short papers of five or ten minutes reading, on the subject.

Adjournment
This was considered satisfactory and it was announced that the next meeting should be so taken up.
The meeting then adjourned till Feb'y 20th

John C. Gatoras
Vice Pres.

Chas. Sparling
Rec. Secy

3rd Reg. Meeting
July 20th 1894

The third regular meeting of the Astronomical & Physical Society was held July 20/94 at the rooms 19 Mill St.

J. A. Paterson M.A.
Chairman

M^r John A. Paterson M.A. vice-president occupied the chair

Minutes.

The minutes of the previous meeting were read and confirmed.

Nominations

Miss Gentle was nominated for active membership ^{by M^r Spink & Lindsay}

Communications

Communications were read from the following gentlemen thanking the Society for the honour of having conferred corresponding and honorary membership upon them

Prof Hale of Kenwood observatory

Prof Rogers of Waterford Me.

Prof. M^r Heath Mill Hill Observatory

Prof G. A. Darwin

Also a letter from Lieutenant Winterhalter in which it was stated that the American Ephemeris would be sent to the Society as published.

A letter from M^r Albery of Meaford Cnt. was read, conveying the information that a number of gentlemen in that town had formed an Astronomical Society.

Motion

M^r Harvey seconded by M^r Elwin moved that the Council consider the question of organizing branch societies throughout the country. Carried.

Library

Mr Pursey reported the receipt
 of Proceedings Royal Society,
 Astronomy & Astro-Physics
 and a copy of "Photographic Times"
 current number,
 Washington observations 1889
 " Meteorological obs. 1889
 " Magnetic obs. 1892

Observations

Mr Harvey reported having observed
 Venus on the evening of July 12th
 the planet being then very near
 the sun

He has also observed Mercury on
 the evening of July 19th.

Mr Pursey referred to the lunar
 halo of July 12th, and some discussion
 arose regarding the visibility of
 the prismatic colours.

Mrs Savigny stated that she had
 seen the colours well defined
 at 7:30 on that evening.

Mr Lindsay reported having observed
 the constantine cross on the evening
 of July 19th; the cross being drawn
 apparently through the moon
 and fairly well defined.

Mr D. G. Ross had observed it also.
 It had not been seen by any
 of the other members present.

Mr Harvey referred to the cause
 of these phenomena, namely the
 passing of the moon's rays through

particles of ice in the atmosphere.

M^r Elvins showed a drawing of the spots upon the solar disc made by M^r Walling at a small telescope.

M^r Arthur Hawley opened up the question of the connection between sun spots and the heat of the sun. Several of the members took part in the discussion. M^r Chant, stated that even the connection between sun spots and magnetic disturbances was still in the region of doubtful coincidences.

The chairman read an extract from a newspaper, which had been forwarded by O'Haratt Smith, giving an account of a very large meteor which had fallen in Nevada.

It was then announced that the discussion of the paper of the previous evening would be proceeded with and several ~~short~~ papers were read.

M^r Lindsay read a short paper giving his opinion that M^r Grant Allen's theory was of service in giving general instruction but held that if we wish to reach the basis of dynamics there is no simpler theory than that outlined by M^r ~~Grant~~ in his essays on "Moving Matter".

Papers

Mr Hull and Mr Chubb followed and both these gentlemen found difficulty in accepting theories which were at variance with those upon which a great science had ^{been} built up.

Mr Elvins considered that both force and energy were forms of motion, and that it was unnecessary to speak of them separately.

Mr Collins read a short paper keeping closely to the argument but disagreeing with the distinguished author.

Mr D.G. Ross upheld in very strong terms the high standing in the literary and scientific world which was accorded by all to Mr Grant Allen, and considered that it was no argument against his theories that they were not endorsed by certain great physicists whose names had been mentioned.

The chairman then called upon Mr Joseph Allen to close the discussion.

Mr Allen defended the theories advanced by his son in very clear and decided terms, explaining many points upon which there was disagreement.

Mr Allen was heartily applauded and the meeting adjourned till

March 6th 1894

John A. G. Foster
Vice Pres^r

Tho Lindsay
for the secretary

4th Reg. Meeting
Mar 5. 1894
The fourth regular meeting of the Astronomical & Physical Society was held in their room 19 McGill St. on the 5th Mar. 1894 at 20.0 o'clock

J. A. Paterson M.A.
Chairman
John A. Paterson M.A. in the chair
16 members present.

Minutes
Read & Confirmed
The minutes of the previous meeting were read and confirmed.

Communications
Communications were received from Sir Robt. Ball, Prof. Pickering, and Mr. Gore.

Report of
Committee
The Committee of the Council reported that after due consideration it was decided to report in favour of the Sir Adam Wilson Telescope being placed at the residence of Mr. John A. Paterson 23 Malvern Road, as ~~being~~ the most convenient place for use, by the members of the Society - adopted

Miss Gentle
elected
Active Member
On motion of Messrs. Sparling and Lindsay the application of Miss Gentle for Active Membership was balloted upon and declared in favour of the Candidate

Librarian
Report
The Librarian reported the receipt of the Univ. Toronto Mathematical and Physical Society's Annual Report -

Predictions
The predictions for the ensuing two weeks were displayed on a new blackboard, during the meeting.

Observations

The following gentlemen communicated recent observations on sunspots on Messrs. Pursey, J. Hollingsworth, S. Hollingsworth, Collins, J. A. Copland, and D. Donaldson.

Adjournment

There being no further business before the meeting it was adjourned to Mar. 19th at 20 o'clock

John A. Gates

Chas. Spaulding
Res. Secy.

Chairman

5th Reg. Meeting. The fifth regular meeting of the
 Astronomical and Physical Society was held
 Mar 19th 1894 in their room 19 McGill St. on the 19th Mar. 1894
 at 20 o'clock.

J. A. Paterson M.A.
 Chairman John A. Paterson M.A. in the chair
 19 Members present.

Minutes Confirmed The minutes of the last meeting were
 read and confirmed.

Communications Communications were read from
 Mr. J. A. Sykes, Galt, enclosing the sum of One
 dollar and asking to be elected an Associate
 member of the Society.
 M. Paul Henry of the National Observatory, Paris
 Mr. E. W. Maunder F.R.A.S., Greenwich Observatory
 Prof. W. H. Pickering, Arequipa, Peru
 Prof. S. W. Burnham, Chicago Ill.
 Prof. W. W. Payne, Editor Astronomy & Physics
 Lieut. A. G. Winterhalter U.S.N. Washington U.S.A.
 Mr. Rudkins Secy Mathematical & Physical Socy
 Toronto University, and others, several of whom
 wrote in terms of high praise of the last Annual
 report, just issued by the Society.
 Dr. J. C. Donaldson, Fergus Ont. reported
 upon the subject of using contracted apertures,
 by stopping down telescopes by inserting a
 cardboard disc covering the central part of
 the object glass, he had found that the defining
 power of a first class instrument did not suffer.

Mr. J. A. Sykes
 elected Associate Member. On motion of Mr. J. R. Collins and
 the Recording Secretary Mr. J. A. Sykes,
 Galt, was nominated for Associate Membership.
 Carried -

Communication
re Affiliation

A communication was received from the Meaford Astronomical & Physical Society asking for terms of Affiliation, and on motion of Messrs Sparling and Elvins the matter was referred to the Council with instructions to consider a basis of Affiliation for Astronomical Societies throughout the Province, also to re-arrange the Secretaries duties - carried.

Librarian's
Report

The Librarian reported the receipt of the following periodicals since last meeting.
 Canadian Magazine, through kindness of Mr. Harvey
 Tenth Report of Public Library
 Solar Faculae - Hale.
 Report of Supt. U.S. Naval Observatory.
 Vol. 6 Nos. 33 & 34 Pacific Astronomical Society
 Nos. 3 & 4 Vol. 4 Journals of the B. Astro. Assn.
 Proceedings of the Royal Society.
 March No. Popular Astronomy
 Astronomy and Astro.-Physics.

Papers

The Chairman read a series of extracts from a somewhat remarkable article by Sir Robt. Ball recently printed in the Fortnightly Review entitled "Significance of Carbon in the Universe" and discussing the theory of Mr. G. Johnstone Stoney, first enunciated some 30 years ago, and which is being revived as one which had not been sufficiently investigated.

Several interesting papers in Magnetism were read by Mr. G. S. Pursey, Mr. J. A. Collins and Mr. Thos. Lindsay.

Some instructive experiments were performed by Mr. A. Aronsberg who brought with him a powerful magneto-machine.

Announcements

The Chairman announced that the next meeting would be held in the Physical room at the University College & that the subject would be "Colour" by G. Ferris Hull B.A., Fellow in Physics.

There being no further business before the meeting it was adjourned till April 3rd.

Chas. Sparling
Recording Secretary

John A. Tolson
Chairman

Chairman

6th Reg. MeetingApril 3rd 1894

The sixth regular meeting of the Astronomical and Physical Society was held in the Physical Lecture room of the University College, Queen's Park on the 3rd April 1894 at 20 o'clock.

A. Paterson M.A.
Chairman

John A. Paterson M.A. in the chair. Through invitation by card, over 150 ladies and gentlemen were present

Minutes
Confirmed

The minutes of the previous meeting were read and confirmed.

Communications

The Corresponding Secretary read a number of Communications

G. F. Hill B.A.
Lecture.

The Chairman then introduced G. Ferris Hill B.A. who occupied the rest of the evening with a lecture on "Colour" accompanied by a large number of practical experiments.

Thanks

On motion of Messrs. Elvins and Douglas a unanimous vote of thanks was tendered to the Lecturer and his Assistant.

On motion of Messrs. Lunnoden and J. Von Sommer a vote of thanks was also tendered to President Loudon of the University College for his kindness in granting the use of the lecture room for the occasion.

Adjournment

The Chairman after putting the motions made a happy speech adjourning the meeting.

John A. Paterson M.A.
Chairman

Chas. Spalding Rec. Secy

7th Reg. Meeting
 The Seventh regular meeting of the
 Astronomical and Physical Society was
 April 17th 1894 held in their room 19 McGill Street on the
 17th April 1894 at 20 o'clock.

J. A. Paterson M.A. John A. Paterson M.A. in the chair.
 Chairman 23 members present.

Minutes The minutes of the previous meeting
 read & confirmed were read and confirmed.

Communications Several communications were read by
 the Corresponding Secretary.

Motion Moved by Mr. Douglas and seconded
 Thanks to by Mr. Ellis " That the thanks of this Society
 D. Holden are due and be tendered to D. Holden of
 for photo. of Moon Lick Observatory, for the photograph of the moon
 recently received from him and that the
 Recording Secretary be authorized to have
 it properly mounted and suspended in
 this room. Carried.

Motion Moved by Mr. G. G. Pursey and seconded
 Thanks to by Mr. A. Elvins and resolved that the offer of
 Mr. J. Hollingworth Mr. John Hollingworth of certain publications
 be accepted and that the Corresponding
 Secretary be authorized to convey to the donor
 the thanks of this Society. Carried

Librarian The Librarian reported the following
 Report receipts since last meeting :-
 Popular Astronomy April 1894
 Solar System.
 Journal of the Br. Astro. Association
 Memoirs of do 2 parts

Astro.- Physics, through kindness of Mr. Gardner.

Observation
of Aurora

A communication was received from Mr. J. A. Copland giving a description of his observations of the recent Aurora.

Report

Mr. Tho. Lindsay read a report of the meeting held Mar. 27th at the Walmer Road Observatory on the grounds of the Vice-president Mr. John A. Paterson.

Papers
Magnetism

Messrs. Tho. Lindsay, W. B. Musson and A. Elvins read valuable papers on Magnetism, & through the assistance of Mr. Collins, ~~and~~ Mr. Elvins made a number of practical experiments.

Address by
Mr. A. Macdonald

Mr. A. Macdonald addressed the meeting introducing his system of teaching Geography ^{& Astronomy} in the Schools and Colleges.

Adjournment

There being no further business before the meeting the chairman declared it adjourned to May 1st at 20 o'clock.

J. M. Smith
Chairman.

Chas. Sparling
Rec. Secy

REPORT from COUNCIL.

---o---

A special meeting of the Council of this Society was, on Tuesday, the 24th of April, held at The Walmer Road Observatory, Mr. John A. Paterson, Vice-President, in the Chair. The members present were Messrs. Elvins, Harvey, Howell, Lumsden, Miller, Pursey, Tedhunter and Sparling.

After discussion, it was moved by Mr. Harvey, seconded by Mr. Lumsden, That whereas it appears necessary that an officer should be appointed to prepare, from meeting to meeting, the Transactions of this Society for publication and that more personal attention should be given to the collection of fees not punctually paid, be it therefore Resolved that the office of assistant to the Secretaries and Treasurer be created; that the member chosen for the position do also assist in the preparation of the minutes and of the notices for the newspaper press and have charge of the instruction of members in the use of the Society's instruments; that an *annual* honourarium of fifty dollars, to be paid quarterly, be attached to the position and that the Constitution of this Society be amended accordingly.---Carried.

It was moved by Mr. Miller, seconded by Mr. Elvins, That the said officer be styled and known as "The Assistant Secretary and Astronomer."---Carried.

After discussion, it was moved by Mr. Pursey, seconded by Mr. Miller, That the Constitution of this Society be amended so as to permit, on terms and conditions satisfactory to this Society, of the affiliation therewith of other Societies having for their objects the promotion of the study of Astronomy and Physics; that each application for affiliation be accompanied by a certified copy of the Constitution, Rules and By-laws of the applicant Society and be referred to Council for consideration and report; that affiliation, when granted, be upon the following general terms and condi-

tions which may be varied or added to by this Society should existing circumstances appear to warrant such variance or addition:--

- (a) The payment by the affiliated Society of an annual fee of \$5 which shall entitle the Society to five free copies of the annual Reports of this Society;
- (b) the right of each member of the affiliated Society to attend, as occasion offers, the meetings of this Society and to take part in its proceedings voting upon questions excepted;
- (c) The privilege of applying to this Society for assistance or for information upon any subject connected with the promotion of their common purposes and objects, and
- (d) The right, subject to the approval of the Council of this Society, as to matter and form, to publish as an Appendix to its Annual Reports, condensed statements of the Transactions of the affiliated Society, but only upon payment to this Society of the actual cost of printing and publication, the affiliated Society to be, however, entitled to as many copies of the General Reports as it shall give due notice of requiring and upon payment of the actual cost of production.---Carried, Messrs. Harvey and Todhunter dissenting.

All of which is respectfully submitted,

John A. S. Atterbury

Chairman.

8th Reg. Meeting
 1st May 1894
 The eighth regular meeting of the
 Astronomical and Physical Society was
 held in their room 19 McGill Street on the
 1st May 1894 at 20 o'clock.

Ed Meredith LL.D.
 Chairman
 Ed. Meredith LL.D. in the chair
 28 Members present

Minutes
 Confirmed
 The minutes of the previous meeting
 were read and confirmed.

Appointment
 of Asst. Secretary
 The Council presented the report of
 their meeting held 24th April, recommending
 the appointment of an Assistant Secretary
 and Astronomer with an annual honorarium
 of fifty dollars, to be paid quarterly and
 that the Constitution of this Society be amended
 accordingly. — Carried.

The Council also reported a scheme
 for the affiliation of other Societies and
 that the Constitution be amended accordingly
 and on motion this matter was laid
 over for consideration.

Election
 of Thos. Lindsay
 as Asst. Secy
 On motion of Messrs. Sparling and
~~Lindsay~~ Todhunter, Mr. Thos. Lindsay was
 declared duly elected as Assistant Secretary
 and Astronomer — Carried.

Communications
 The following communications were read:
 Mr. Otto Straue, thanking the Society for election,
 Miss Willard, referring to Jupiters Satellites,
 Dr. Veeder, progress of Aurora observations,
 J. Cooke & Sons, calling attention to new object glass
 of 3 lenses
 Mr. W. H. Wood of England, objecting to deductions

of Mr. Harvey and Mr. Lunsden with regard to height of Aurora.

Mr. Chas. Carpmael, in reference to Earth currents suggesting that the Society take up the subject and enclosing paper by Mr. O. Klotz.

Dr. Donaldson, reporting observations, Letter from Meaford Astronomical Society stating their views on subject of affiliation.

Librarian's
Report

Librarian reported receipt of several volumes of current publications also donation of 4 Vols. Astronomical Register 1 Volume First two Years Transactions containing manuscripts in reference to Jupiter's 5th Satellite discovery.

Geological Strata Map of North American Continent.

Observations

Mr. Pursey described the appearance of Sun Spots and faculae.

Mr. Miller called attention to letter in English Mechanic in reference to heat radiated by Sun Spots and stated his views showing that it is necessary in considering a portion of this kind, to take into account the difference in the ratios of absorption for different rays.

Discussion on Sun Spots.

Mr. Harvey and Mr. Ridout supported the depression theory. Mr. Elvins dissented.

Mr. Harvey addressed the meeting at some length on the subject of the aurora and showed very palpable errors in the deductions made by Mr. W. H. Woods.

Papers.

Mr. Thomas Lindsay read a paper on Mathematical and Astronomical Fallacies, dealing with the errors of the Ancients in regard to the form, magnitude, and motions of the Earth also with the theories ~~and~~ ^{and} parallels of transcendental geometry in regard to parallel lines and ~~four~~ ^{four} dimensional space.

Adjournment.

There being no further business before the meeting it was adjourned to May 15th at 20 o'clock.

John A. Gattaka

Chairman

Chas. Spaulding
Recording Secy.

9th Reg. Meeting
May 15th 1894

The Ninth Meeting of the
Astronomical & Physical Society
was held May 15th at 19 M'Gill St.

J. A. Paterson M.A.
Chairman

M^r John A. Paterson M.A. occupied the chair.

Minutes
Confirmed

The minutes of the previous meeting
were read and confirmed.

Communications

Cordial letters were read from
Rev Father Sidgreaves, Stonyhurst Eng.
M^r W. D. Barbour Leeds Eng.
M^r Cleuclaud Abbe
and Dr M. A. Veeder.

The chairman also read a letter
received from Dr Joseph Morrison of
Washington D.C.
Dr Morrison complained of having been
annoyed by certain reports which
had been circulated connecting his
name with ridiculous theories regarding
the South Pole.

Librarian's
Report

The librarian reported the receipt of
publications of British Astronomical
Society and the Royal Society.

Report
of Committee

The special report on the subject of
the change in Time Reckoning was
received. The memorial addressed
to the Governor General of Canada by
the Joint Committee, was read and
it was moved by Dr E. A. Meredith
seconded by M^r J. Goddard that
the same be signed and forwarded.
This was carried.

M^r Elvins reported some observations of the groups of spots now on the Sun's disc and stated that the appearance when on the limb was good evidence that the spots were not depressions beneath the surface.

Paper.

Dr E. A. Meredith read some extracts bearing upon the theory that ~~on~~ a fall of temperature is experienced in Europe and America on the 12-15 of May by reason of the Earth's being in a part of its orbit where it meets a meteoric stream sufficiently dense to cut off the solar heat perceptibly. M^r R. F. Stupart stated that he had at the request of Dr Meredith examined Toronto records, ^{but} without finding corroborative evidence. He would however examine further and also the records of other places and report at a future meeting.

Announcement

The chairman announced that the paper contributed by M^r Carpmail being an account of the magnetic storm of February last, would be read by M^r R. F. Stupart, acting-director of the observatory.

M^r Stupart read the report as compiled and addressed the meeting on the subject generally. He said the cause of the connection between magnetic disturbances and Earth currents had not been arrived at, but it was well known that a connection existed.

He explained how the practical telegraph operator might assist in compiling a record of disturbances and read a letter, forwarded by Dr. Reeder, from the Superintendent of the Western Union Telegraph company bearing upon the subject.

The chairman read some extracts from papers read before the Royal Society on the subject of Earth currents and after an interesting discussion a committee consisting of Messrs. Stupart, Lumsden, Collins and Lindsay was appointed, to consider how the society might further the work of investigation.

Motion

Mr. G. G. Pursey stated that Mr. R. B. Ellis an active member of the Society was about to leave Ontario for British Columbia and moved, seconded by Mr. Musson that the Corresponding Secretary be requested to convey to Mr. Ellis the best wishes of the Society and the hope that he would continue as far as possible to keep up his connection with the Society.

Adjournment

The meeting then adjourned till May 29th at 2 o'clock

Conferred
 J. H. Lindsay
 Secy. for Recording Secy.
 Chairman

10th Reg. Meeting
May 29/1894

The Tenth Meeting of the
Astronomical & Physical Society
was held May 29/94 at the
rooms 19 McGill St.

Ed Meredith LL.D. & E.A. Mearns occupied the Chair.
Chairman

Minutes
Confirmed.

The Minutes of the previous
meeting were read and
confirmed

Communications Letters were read from
Australia
Dr Joseph Morrison Washington D.C.
Prof Cleveland Abbe
Mr Charles Clarke, Sherbrooke Ont.
Also an invitation to representatives
of the Society to meet at the Canadian
Institute other gentlemen representing
the Institute, the City Council and
the Educational authorities for the
purpose of considering arrangements
with the view to bringing the
British Association for the Advance-
ment of Science to Toronto in 1897.
Mr J. Goddard and Mr J.A.
Paterson were appointed to
represent the Society.
Mr Harvey addressed the meeting
on the subject of certain criticisms
which had appeared in English
journals on observations published in
the Society's Transactions.
The Editor of "Nature" had requested
Mr Harvey to forward his views on

the parallax of the Aurora in reply to M^r Wood of Birmingham. This had been done promptly, no particular pains being taken on M^r Harvey's part to spare the critic who ^{certainly} had not been just as cautious as he might have been.

The librarian reported among other publications a valuable memoir published by the Observatory of the Roman College, containing results of observations of the protuberances on the Sun's limb.

Report of Committee

The report of the Committee on the Investigation of Earth Currents was received and adopted. It was to the effect that the Committee had found itself unable to advance at all until the Telegraph companies had been communicated with; a circular letter had therefore been despatched to the B.P.R. Telco, the G. N. & Telco the Commercial Cable and the Anglo-American Cable, setting forth the Society's objects, and asking the straight question whether they would be willing in the interests of science to co-operate. There had not yet been time for replies.

Observations

The weather had been unpropitious for observing and but little had been done. M^r Pusey however had observed the solar disc whenever

an opportunity had occurred and a sketch of the spots now upon the Sun was drawn on the blackboard.

Notes & Queries

Three queries to be answered at the next meeting were handed in

- 1 What is an Earth Current?
- 2 What causes the dark lines in the solar spectrum?
- 3 why is not the climate the same today as this day last year.

Paper.

The paper of the evening was a popular essay on the Solar Paradox and the Sun's distance, contributed by Dr Joseph Morrison and read by Miss Gray. The history of the problem was briefly but lucidly sketched and the best and most reliable measure of the solar parallax was given as between 8.80 and 8.81 seconds of arc. Dr Morrison's paper closed ~~the~~ ^{with} the paper by saying "This is the result of twenty-one centuries of observation, of research & toil."

Adjournment.

A short discussion followed after which the meeting adjourned till June 13th at 20 o'clock.

John A. Gateron
Vice Pres^r

Thos Lundray
Gen Secy.

11th Reg. Meeting
June 12th 1894.

The Eleventh Meeting of the
Astronomical & Physical Society
was held June 12/94 at the
rooms 19 Melvil st

J. Paterson M.A.
Chairman.

M^r John A Paterson vice president
occupied the chair.

Communication

A note was read from M^r Halloworth
of Muskoka to the effect that the
books re which he had donated
to the Society would be forwarded
at an early date.

Motion

M^r Elvins seconded by M^r Phillips
moved that the hour of meeting
be changed from 8 o'clock to 7.30 p.m.
Some discussion arose during which
M^r Pursey stated that if the business
were proceeded with at 8 o'clock, punct-
ually, there would be ample time before
a late hour to finish the work of
the evening. This being the opinion
generally expressed the motion was
withdrawn but on the understanding
that business should commence at
8 o'clock.

Nominations

S. J. Saunders
Proposed as
Assoc. Member

M^r Samuel J Saunders B.A. of Clinton
N.Y. was proposed as an associate
member by M^r Chant and M^r Spaulding.

Assoc. Member

P. H. Sims

Active member

M^r P. H. Sims of Toronto was proposed
as an active member by M^r John
A Paterson and M^r Lindsay.

Librarians
Report.

The librarians reported the receipt of current nos. of exchanges and also the Proceedings of the Royal Society of Canada for 1893.

Report of
Committee

A report of the joint meeting of public bodies held May 31st to consider the extending of an invitation to the British Association for 1897 was received and discussed.

Motion.
Invitation to
B.A. for the Adv.
of Science.

The following resolution was unanimously adopted
Resolved, that this Society heartily approves of the invitation proposed to be given by the City of Toronto to the British Association for the Advancement of Science to hold, in Toronto, its Annual meeting in the year 1897, and assures the Canadian Institute, which is taking the initiative in the matter, that, if the invitation be accepted, the members of the Society will do all in their power to assist the citizens of Toronto to make the meeting of the British Association as successful as is possible.

Report of
Committee
on Earth Currents.

A short report from the Committee on Earth Current investigation was received and a letter from Mr John A Copland bearing on the subject was read.

Observations

Reports of observations were received from Mr Pursey, St Donaldson of Puffin and Mr Z. M. Collins.

Mr Collins called attention to a peculiar physical feeling experienced during a recent auroral display.

St Donaldson wrote describing a hail storm in which the stones were of a geometric form, that of a truncated cone.

A short account of a daylight Aurora was received from Mr Miller; light fleecy clouds had been seen to form the coronal arch as do the auroral streamers.

In answer to a question asked at the previous meeting Mr Ekins gave an explanation of the dark lines in the solar spectrum. He held that the current explanation usually accepted was true as a statement of fact but did not go far enough. He thought that the vibration at a particular wave length ~~might be~~ ^{might be} doubled and so rendered invisible but believed the line might be found in the ultra-violet region of the spectrum by photography. Mr C. A. Chant discussed the matter with Mr Ekins but held that the doubling of the vibrations was contrary to the law of harmonic wave motion.

Adjournment

After some further discussion
on this interesting point the
meeting adjourned to meet
June 26th

A. Sinclair.
Chairman.

J. H. Lutzay
for the Secretary

12th Reg. Meeting
June 26th 1894

A. Sinclair M.A.
Chairman

Minutes
confirmed

Election

S. J. Saunders B.A.
Associate Member.
P. H. Sims
Active Member

Committee

Report of
Committee
on
East Currents

The Twelfth regular meeting of the Astronomical and Physical Society for 1894 was held June 26th at the rooms 19 Melville St 15 members present.

Mr A Sinclair M.A. occupied the chair.

The minutes of the previous meeting were read and confirmed.

Mr S. J. Saunders B.A. of Clinton N.Y. was elected an associate member
Mr P. H. Sims of Toronto was elected an active member.

A letter from Dr Veder was read conveying the information that the Jackson-Harmsworth polar expedition to start from London in July, would take part in the Auroral observations, following Dr Veder's scheme.

Dr Gill of the Cape of Good Hope Observatory wrote thanking the Society for copy of Transactions.
Mr G. G. Albery of Meaford wrote in reference to the proposed affiliation of the Meaford Astronomical Society with this Society.

A report from the committee on Earth current phenomena was received from Mr Lindsay who stated that Mr C. E. & Mr Manus of the Great North Western Telegraph Co would commence observations at an early date.

Borrowing Books

Mr Pursey addressed the meeting in reference to the present system of ~~borrowing~~^{borrowing} books from the library. He had not been able to learn where the copy of Proctor's star atlas was at the present time and wished the volume returned. It was decided to refer to the Council some method for better regulating the borrowing of books, so that no work would be too long from the library shelves.

Observations

An observation of solar prominences had been made by Mr Hadden of Iowa, who forwarded a full report, and a sketch of the appearance of the sun's limb as seen in the spectroscope. This had been shown to Mr Stupart who had looked up the magnetic records for the stated time, July 7 6 pm. but had not found any co-incident disturbances of the magnets.

Luncheon

Mr Elvins read an answer to Mr Harvey's question regarding weather changes and ~~suggested~~^{thought} that the incoming of cosmic matter, as the solar system traverses space should be considered in any attempt to explain why we experience different ~~times~~ meteorological conditions at the same seasons of the year.

Mr Lindsay called the attention of the members

to Prof. Carnegie's work on ~~the~~ "Law and theory in chemistry" and illustrated the chapter on the "Carbon atom" by exhibiting a model to represent the carbon atom at the centre of a regular tetrahedron as the new theory supposes it to be; the experiments with polarized light upon different compounds were referred to and the hope expressed that some of these might be at a future meeting repeated.

Notes & Queries

Four queries were handed in to be answered at a future meeting:

Paper

M^r Arthur Harvey had prepared by request some notes on the recent experiments by Prof. Dewar at the Royal Institution. These were read together with some of M^r Harvey's speculations regarding the state of matter at absolute zero. A short discussion followed; the subject proving so interesting that it was decided to take it up again as early as possible.

Adjournment

There being no further business the meeting adjourned till July 10th.

John A. Galbraith
Vice Pres.

Chas. H. Spaulding
Rec. Secy

13th Reg. Meeting The Thirteenth regular meeting
 July 10th 1894 of the Astronomical & Physical Society
 held July 10th 1894

Members present 18

H. Paterson M.A., M^r John A. Paterson M.A. occupied the chair
 Chairman

Minutes. The minutes of the previous meeting
 read & confirmed were read and confirmed.

Communications Letters were read from the Meaford
 Astronomical Society, and from
 M^r J. Connon of Elora.

Nominations M^r W. A. Campbell of Toronto was nom-
 W. A. Campbell inated for active membership by
 Active member. M^r Harvey and M^r Plouin.

Rev. M. Desjardins M^r Desjardins of Toronto was
 Active member nominated for active membership
 by Rev M^r Shortt and M^r Sparling.

Librarian's Report Librarian reported receipt of the
 report of the "Sun Section" of the
 Brit. Astron. Assn. and also volume
 from Observatory of Rome.

Observations M^r Pursey reported his observations
 of the sun and a short discussion
 followed regarding the connection
 between sun-spots and faculae.

Predictions M^r Lumsden reminded the members
 that the evening of July 13th would
 be a favourable one for observing the
 Janiculus figure in the outline of the
 moon.

Notes & Queries

Mr Harvey replying to a query put at the previous meeting explained the construction of eye-pieces for the telescope.

Mr Miller also by request gave an illustration of the method by which the wave lengths of light are determined.

Mr Lindsay in reply to a question gave the theoretical explanation of the rise in temperature of a gaseous sphere while radiating heat and contracting by gravity. The method of determining the mass of a spectroscopic binary star system was also discussed.

Announcements

It was announced that at the next meeting Mr R. H. Stupart would read a paper on "Canadian Weather" and that a paper by Rev J. E. Espin would be read at a future meeting.

Adjournment

There being no further business the meeting adjourned to July 25th

Charles H. Shortt
Chairman

W. H. King
Asst. Secy

14th Reg. Meeting The fourteenth regular meeting of the Astronomical & Physical Society held July 24, 1894 at the rooms 19 McGill St

Rev. C. H. Shortt Chairman. Rev. C. H. Shortt M.A. occupied the chair.

Minutes read & confirmed The minutes of the previous meeting were read and confirmed

Communications Letters were read from
 Rev. J. Caswell President. Meaford
 Astronomical Society;
 Prof. G. E. Hall Kenwood Observatory;
 Arthur Cottam F.R.A.S. London Eng.
 M^r Otto J. Klotz Fort Wrangell, Alaska

Report from Council The council of the society had held a meeting on June 17th to consider the best method of co-operating with the Royal Society of England in the matter of compiling the great catalogue of scientific publications. No action had been decided upon, but in connection with this,

Notice of motion M^r Arthur Harvey gave notice that at the next meeting he would move that this society become affiliated with the Royal Society of Canada.

Election

Rev. W. DePencier Rev. W. A. DePencier of Toronto and W. A. Campbell M^r W. A. Campbell of Toronto were active members, duly elected active members.

Librarian's
Report.

The librarian reported receipt of
 "Report of Hamilton library";
 Prof Keller's reprint of article on the
 "spectrum of the Orion Nebula";
 Copy of "Popular astronomy"; copy of "Knowledge"

Communication
re Earth Currents.

Mr Lindsay reported receipt of letter
 from Commercial Cable Co to the effect
 that to record Earth-currents at
 their terminus would interfere with
 the regular work of the line. A letter
 in reply had been forwarded asking whether
 the company would send reports of
 the times of disturbances without further
 particulars.

Mr R. F. Stupart
reported on
Earth Currents.

Mr R. F. Stupart reported having examined
 the instruments in use at the office
 of the G. N. W. Tel. Co. These had not been
 found quite suitable for obtaining
 proper records of the Earth currents
 but arrangements had been made with
 Mr McManus to connect the observatory
 with the Telegraph office when a
 disturbance was being felt and
 thus to determine the intensity, etc
 by the Observatory instruments.

Observations

Several observations of interest were reported.
 Mr Donaldson of Ferguson had noted very
 plainly the South Polar cap on Mars.
 Mr Lumsden had been quite successful
 in seeing the figure in the outline
 of the moon known as Cassini's Moon
 maiden on July 13th.

Presentation
by Mr. Stupart

Observations

Mr Stupart presented photographic tracings of the magnetic storm of July 20th.

Mr Harvey called attention to the difficulty he had experienced in seeing the companion to Polaris; ~~and~~ ~~object~~ Mr Miller stated that he found the object quite within the power of a 2 1/4 inch objective.

Paper.

The paper for the evening was read by Mr R. F. Stupart on the "meteorology of Canada", dealing with the variations of temperature, rainfall &c and suggesting points worthy of study in the endeavor to determine the causes of variations. ~~to future~~ ~~future~~ Another paper on the subject was promised by Mr Stupart for a future meeting.

Discussion
on Paper

The paper was followed by a discussion in which Mr Elvins and Mr Harvey took part.

Adjournment

There being no further business the meeting adjourned till August 7th.

Confirmed

W. Marshall
Chairman.

Chas. Sparling
Recy Secy

15th Reg. Meeting

The fifteenth regular meeting of the Astronomical and Physical Society of Toronto, held in their room 19 McGill St., on the 7th Aug. 1894 at 20 o'clock.

Chairman

D^r E. A. Meredith chairman.
18 Members present.

Minutes
read & confirmed

The minutes of the previous meeting were read and confirmed.

It was moved by M^r Arthur Hawley seconded by M^r A. Elvins that the corresponding secretary be requested to communicate with the secretary of the Royal Society of Canada with a view to the affiliation of this society with that body. Carried.

A letter from the Governor General's secretary was read and also copies of letters from the secretary of state for the colonies and from the secretary of the Admiralty, to the effect that the discussion of the subject of change in astronomical time reckoning would shortly be taken up, at a meeting of the Admiralty.

An extract was read from a letter from M^r A. Cameron of Yarmouth, Nova Scotia. Information was asked regarding the exact position in lat. & long. of an observers mark erected at Yarmouth.

M^r J. Maughan was nominated for active membership by M^r Harvey and M^r Pursey.

The librarian reported receipt of several valuable and rare books from a member of the society; also a collection of publications of the Royal Academy of Belgium. The latter were forwarded by St. Francois Turley, presumably.

The corresponding secretary was requested to convey the thanks of the society to St. Turley, on motion of M^r Harvey and M^r Elvins; and was also requested to solicit St. Turley to become a corresponding member of the society.

Through M^r Pursey the thanks of the society were conveyed to the member who had ^{also} ~~donated~~ favored the society so kindly.

M^r Elvins and M^r Harvey presented drawings of Mars taken at the telescope, the two agreeing very closely. The gibbous form of the planet had been plainly seen.

M^r Miller reported having observed a disturbance on the sun in the neighborhood of a spot on Aug. 5th. an eruption of hydrogen was indicated in the locality. M^r Miller said this particular observation in such a region of the sun's surface he had not observed before.

Discussing the spectrum of Mars Mr Miller stated that it is wanting in the violet end; he suggested very careful spectroscopic observations of different regions of the surface of Mars as an aid to our learning more of the atmosphere of the planet.

~~It~~ It was announced that the Wilson telescope had been removed from Mr Paterson's residence during his absence from city and that Mr Mess-Collins had taken care of it and had very kindly repolished the mirror and flat.

Mr Arthur Hawley read a paper on the "South poles of Earth and Mars" introducing a drawing by Proctor of the planet and maps of the antarctic regions of the Earth; reviewing the literature of the subject and announcing his belief that the South pole of the Earth is now in a glacial epoch, as the North pole has been in past time. He believed that glaciers do not move over the continents but over the submerged land.

After a short discussion the meeting adjourned to Aug 26th

Thos Lindsay
for the Secy.

Confirmed
S. A. Merrill
Chairman

The sixteenth regular meeting of the Astronomical and Physical Society of Toronto, held at 19 McGill St. Aug 21 1894.

Dr E. A. Meredith occupied the chair

Thirteen members were present

Communications were read from Mr C. H. Mead of McGill Observatory; Mr L. S. H. Shearman of Brantford; Mr J. C. Donaldson of Tuzus and Mr J. A. Copland.

A card was received also from the secretary of the Institute of Nova Scotia in reference to the exchange of publications.

Mr Harvey seconded by Mr Lindsay moved that the ^{suggestion} ~~best~~ of exchange be referred to the Council with the view of making out a list of societies, &c to whom this Society's publications should be sent. This was carried

Mr J. Mauphad of Toronto was elected an active member.

The librarian reported the receipt of volumes of Nova Scotian Institute transactions; Astronomy & Astral Physics from Mr E. W. Gardner;

and publications of the Weather Bureau from Mr Cleveland Abbe of Washington.

Mr J. K. Collins presented some copies of a photograph of the full moon taken at the Wilson telescope Aug 16th. The prints had been prepared by Mr Mason, who was authorized to execute a number for members of the society.

Sketches of Sun Spots were presented by Mr Purdy, Mr Lunsford and Mr Elvins.

Mr Harvey read some notes on Terrestrial Magnetism and the aurora, in the form of queries for consideration. He wished the Earth Current committee to reply ~~at early~~ to these at a future meeting.

Rev C. H. Shortt during a general discussion on the subject of electric phenomena described a case of lightning stroke, in which it seemed the lightning had ascended. Some of the members had met with similar cases, but rarely.

A paper on "Comets of Short Period" contributed by Mr W. F. Denning of Bristol Eng was read by Mr Shortt.

Mr Z. M. Collins described some experiments with a magnetized steel disc. He stated that it is not correct to speak of ~~a~~ the ~~one~~ pole of a magnetized sphere as being localized. Each hemisphere is a pole and the magnetism equally distributed around it. What is commonly called the pole is merely the centre of the field.

Mr M. Turnbull ~~asked~~ addressed the meeting on the subject of procuring a large telescope for the city of Toronto and pointed out that a reflector could be procured at a moderate cost and fully equal to many of the great ~~reflectors~~ refracting telescopes of the day, which are very costly indeed.

Mr Arthur Harvey, on the conclusion of Mr Turnbull's address, stated that Mr. Loshunter had for some time advocated the erection of a popular observatory in this city; he would probably at the first meeting at which he ~~would~~ ^{would} be present make a motion in reference to this ~~and~~ which would bring the matter directly to the notice of the society. Mr Harvey was glad that Mr Turnbull had brought up

the question of procuring a telescope
and thought he had made
one difficulty appear not so
great.

A paper by Mr J Phillips on the
Nebular Hypothesis of La Place
was announced, to be read at
the next meeting, ~~and~~
there being no further business
the meeting adjourned till
Sept 4. 1894

J. H. Laidray
Asst. Secy.

Copied
E. Mendell
Chairman

The seventeenth regular meeting
of the Astronomical & Physical
Society held Sept 4 1894

23 members present;

Dr E. A. Murchith in the chair,

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

Communications, were read from
Niagara astronomical Society

Mr J Cannon of Elora;

Secretary of the Royal Society of Canada

Mr Selwyn of University College

Mr W. F. King of Ottawa

Prof Jas. E. Keller, Allegheny

Mr J Van Sommer

Dr Brashear of Allegheny.

The President of the Commercial
Cable Co.

It was moved by Mr J Todhunter
seconded by Mr A. Harvey
and Resolved

that the next meeting of this
Society take into consideration
the advisability and practicability
of erecting an astronomical
observatory in the city of
Toronto and maintaining the
same by public or private
enterprise or both; and which

if properly equipped could
be made to aid very
materially in the general
advancement of Science
Carried

Among predictions of phenomena
were noted

The partial eclipse of the moon
Sept 14th

The occultation of the Pleiades
Sept 19th

Mr Elvins called attention to the
recent thunderstorms during
which unusually small quantity
of rain had fallen, being 15 minutes.
He had successfully observed
the spectrum of the lightning
flash and had noticed an
entire absence of bright lines;
the spectrum was continuous
from the red to the violet.

Mr Pursey presented a series
of drawings of sun spot groups.

Mr Harvey wished to call the
attention of the Earth current
committee to difference of
colour in auroral seen at
the Arctic and Antarctic regions.
Mr Lindsay on behalf of the
committee stated that a report

would be handed in at the next meeting dealing with the questions asked by Mr Harvey at the last meeting

Mr J Phillips read part of a paper on the nebular hypothesis of La Place. Discussion was postponed until the next meeting.

There being no further business the meeting adjourned.

Eratum

The chairman read a cordial letter from Dr Francois Terby of Louvain Belgium

It was moved by Mr Harvey seconded by Mr Elvins that Dr Terby be declared elected a corresponding member of this Society

Carried

Charles H. Shortt.

Chas. Spang
H.
Reese

The 18th regular meeting of the Astronomical & Physical Society held Sept 18th at 19 W. 42nd St.

Rev. B. N. Shortt in the chair

The minutes of the previous meeting were read and confirmed.

It was moved by Mr. A. Hawley seconded by Mr. G. E. Lunsden that the proposal to establish a popular observatory in Toronto be referred to the Council for consideration with a recommendation to take immediate action.

Carried

A letter from Rev. Mr. Caswell of Meaford was read, introducing Miss Paul a member of the Meaford astronomical Society, who was welcomed by the chairman.

The following papers were received and taken as read.

- "On Spectroscopic Binaries" by J. E. Gore.
- "Cosmic origin of Meteorological Phenomena" by Mr. A. Elvin.
- "A visit to Chamberlain's Observatory Denver Colorado" by Miss K. E. Vale.

M^r Pursey, librarian, reported an unusually long list of contributions from other societies and observatories, and two prints of photographs of the lightning taken by M^r E. Staunton of this city and donated by him.

The Earth current committee presented a report bearing upon M^r Harvey's paper read at a recent meeting.

The report was discussed by Mess. Harvey, Ridout and Collins.

Reports of observations of the partial eclipse of the moon were received from M^r Lumsden M^r Harvey and others.

M^r J. Phillips read a continuation of his paper on the nebular hypothesis of La Place; he dealt principally with the 'law of the "conservation of areas"' and held that the elements of the solar system do not show that this law has been followed.

The lateness of the hour prevented discussion on this point.

The meeting then adjourned till Oct 2nd

Wm A B Atterton
Vice Pres

Herb Gooday
for the Reading
Secretary

The 19th regular meeting of the astronomical and Physical society of Toronto held Oct 2nd 1894 at the room 19 McGill st.

The vice president M^r J. A. Paterson M.A. occupied the chair.

23 members were present.

The minutes of the previous meeting were read and confirmed.

A letter from Lady Wilson was read, acknowledging receipt of the copies of the photograph of the moon; ~~and the society was~~ Lady Wilson also donated to the society three standard works on astronomy.

A communication from M^r J. A. Sipes of Galb was read; he believed he had some years since noted evidence of volcanic activity on the moon and wished the society to note his memorandum on the subject.

A communication from Prof Jas. Keeler of Allegheny Pa. was read, in which a paper for the society was promised.

The librarian reported the receipt of volume ~~the~~ III of the Lick Observatory reports, donated by

Prof. Holden. The volume contained some beautiful heliogravure plates of the moon ~~and also~~ from negatives made at the Lick telescope. These were especially admired.

M^r Pursey reported his observations of the sun's surface; the number of spots had not been very great for some time past.

M^r Miller and M^r Elvins reported observations of Mars. Drawings of the planet ~~taken~~^{made} at the telescope of the Toronto Observatory were presented by M^r Elvins.

These showed the colours of different parts of the surface but no rectilinear markings had been seen.

M^r Arthur Harvey addressed the meeting, briefly on the subject of terrestrial magnetism, and returned the charts and books and memoranda which the Earth current committee had placed at his service. M^r Harvey thanked the committee for the assistance rendered and hoped that M^r J. R. Collins would continue the work of photographing magnetic lines, of force under various conditions.

M^r J. Phillips gave an illustration of his views on the formula employed to prove certain assumptions in the nebular hypothesis.

Mr J. Lindsay, read a paper on the transit of mercury to occur Nov 10th and presented a solution of the problem of determining the moment of first contact for Toronto.

A letter from Prof. Keller was read bearing upon the spectroscopic method of noting the contact.

There being no further business the meeting adjourned till Oct 16th.

Chas. P. Spaulding

Rec Secy
h.

Conferred

St. Merrett
Chairman

The 20th regular meeting of the
Astronomical & Physical Society
held Oct 16th at 19 McGill St.

D. E. A. Meredith occupied the chair
24 members present.

The minutes of the previous meeting
were read and confirmed.

A communication was read from
the Inaford Astronomical Society,
accepting affiliation on terms
proposed.

A letter from Prof. Jas. E. Keeler
of Allegheny was read, covering
transmission of a paper for
publication and containing a short
note relative to observations of Mars.

A Report from the Council was
received, and the following
resolution was adopted:

Moved by E. P. Spaulding seconded
by Mr. D. J. Howell that Messrs
Lodhwick, Miller and Ekins
be a sub-committee, with power to
add to their number, to consider
the matter of establishing ~~and~~ a
permanent observatory and to
report to the Council at its
next meeting.

It was moved by Mr J Loder
 and seconded by Mr Linderay:
 Whereas the Society has learned
 with much regret of the death
 of one of its active members,
 Mr Stephen Huebner
 and whereas it is remembered
 by many of us that our late
 member was at all times actively
 engaged in furthering the interests
 of this Society,
 therefore be it resolved,
 that the Society communicate
 with the relatives of the deceased
 and offer their condolences;
 and also that an obituary
 notice be published in the
 forthcoming report of Transactions
 carried

It was moved by Mr Linderay
 seconded by Mr Linderay and
 resolved, that the manuscript
 of the Transactions for 1894 be
 placed with Miss Rowell and
 Hutchison for printing, that,
 firm having agreed to continue
 the contract on the same terms
 as last year. Carried

Miss Cambridge ~~was~~ ~~now~~ secretary
 of the Y. W. C. Y. was nominated
 for active membership in this
 Society. On suspension of the
 rules Miss Cambridge was
 declared elected, and was appointed

to the charge of the book-case in the absence of the librarian, she having kindly consented to undertake the changing of books ^{at any time} during the week.

Mr. Lindsay gave notice that he would move that the library of the Society be ~~and~~ open as a library of reference, to the public.

The librarian reported the receipt of Royal Society Proceedings and Numbers of "Science Digests" donated by Dr. Harriet W. Smith.

Mr. Pursey described his method of measuring the dimensions of sun spots on the projected image. Mr. Harvey asked whether any member had ever noted the rotation of a sun spot. Mr. Elvins stated that he had once made the observation, which has been recorded in "Webb's Celestial Objects".

Mr. Z. M. Callias presented two, parabolic mirrors ^{of 6 1/4 inch} for reflecting telescopes, which he had ground and figured. These were shown to the members who unanimously congratulated Mr. Callias on his success in this

Class of practical work and encom-
 aged him to continue with a view
 to the construction of a still larger
 mirror

The paper for the evening was
 read by Mr A. Elvins on
 "The cosmic origin of meteorolo-
 gical phenomena"

The theory that meteoric matter
 coming in to the atmosphere
 affects the magnetic needle was
 discussed, and also the
 probability that such matter
 affects meteorological conditions
 generally.

Mr Elvins held also that the
 position of the planets affects the
 quantity of meteoric matter
 which enters our solar system
 from outer space.

The paper was discussed by
 Mr Newey, Mr Paterson and
 Mr Phillips

It was announced that at
 the next meeting Mr D. J. Howell
 would exhibit the lantern slides
 in the possession of the Society.
 The meeting then adjourned
 till Oct 30

John A. Paterson
 Vice Pres^r

C. P. Spaulding

21st Meeting
Oct. 30th 1894
The twenty first regular meeting of the Astronomical and Physical Society was held in their room 19 McGill St. on Tuesday evening Oct. 30th 1894 at 20 o'clock.

J. A. Paterson M.A.
Chairman
28 present
The Vice President Mr. J. A. Paterson M.A. in the chair
28 Members present.

Minutes
read & confirmed
The minutes of the previous meeting were read and confirmed.

Communications
Communications were read from Miss Clarke, London Eng., D. Veeder, Lyons N.Y. and Mr. Veal, Assam, India.

M. Turnbull
Chart
Mr. Mungo Turnbull kindly explained and exhibited a Diagram of the Transit of ~~Venus~~ to take place on the 10th Nov., and on motion of thanks being tendered by the ~~Society~~ ^{Members}, he very generously donated the Diagram to the Society.

Decease of
President
Chas. Carpenter
Committee
Memorial
The Chairman in a very feeling manner intimated to the members the decease of our late President Mr. Chas. Carpenter and on motion nominated the following Committee Messrs. Elvins, Miller and Lumsden, to prepare a suitable Memorial to the family of the deceased. Carried

Librarian's
report
The Librarian reported the following receipts since last meeting:—
Journal of Proc. of Hamilton Assn.
A Work on the great Telescope

3 Volumes from Lady Wilson
Science Giftings from Dr L W Smith.

Committee
on Observations

The Committee on permanent Observations
reported progress.

Predictions
Observations

Predictions - Transit of Mercury Nov. 10th
Observations - Sunspots reported by Mr. Pursey.

Exhibition
of Slides

Mr. D. J. Howell then exhibited the
slides belonging to the Society which proved
to be satisfactory and a valuable asset.

Adjournment

There being no further business
the meeting was adjourned to Nov. 13th 1894

John A. Galsworthy

Chas. T. Spaulding
Rec Secy

Chairman.

The 22nd regular meeting of the
Astronomical & Physical Society
was held Nov 13th 1894 at their
rooms 19 McGill st.

The Vice President M^r John A Paterson
occupied the chair
19 members present

M^r G. L. Lumsden read extracts
from the correspondence between
the Home and Colonial Governments
in reference to the proposed change
in Astronomical Time Reckoning.
A circular had been issued to the
various foreign governments which
~~expressed~~ ^{published} Astronomical Almanacs, in
order to learn their views on the
subject.

M^r John Bertram of Toronto was
nominated for active membership by
M^r J. M. Clark and M^r G. P. Spaulding.
On suspension of the rules M^r
Bertram was declared elected.

M^r A. Elvins gave notice that he
would move that a committee ~~was~~
be appointed to prepare a complete
catalogue of the works in the
Society Library.

The committee appointed to prepare a
memorial to the late president M^r C. Carpenter
presented their report.

To the Vice-President and Members
of The Astronomical and Physical Society of Toronto.

Your Special Committee appointed to consider the action proper to be taken with respect to the death of the President of your Society, begs leave to report as follows:--

Your Committee would recommend that the following, ~~or~~
~~a similar~~, Resolution be inscribed on the Minutes of your Society:--

RESOLVED that The Astronomical and Physical Society of Toronto has learn^{ed} with deep sorrow of the untimely death of its President, Mr. Charles Carpmael, M.A., F.R.A.S., Director of the Toronto Observatory and Superintendent of The Meteorological Service of Canada and in common with other scientific bodies, deploras the loss thus sustained; That this Society desires to pay a tribute to the memory of one who, apart from the obligations he conferred upon it as a whole, endeared himself to many of its members by the willingness he always displayed in assisting to remove the difficulties which the Society had to encounter in its Astronomical and Physical work; That this Society gratefully acknowledges the readiness with which Mr. Carpmael, at an important stage of its existence, acceded to its request to become its presiding officer and to lend the benefit of his name and influence in opening, to it avenues by which it could come into official relationship with similar bodies in the Mother Land as well as in foreign countries; That it was a subject of equal regret to this Society as it was to its late President that the state of his health precluded his regular attendance at its meetings and prevented him from giving to its interests that personal supervision which it would otherwise have enjoyed; That whether publicly or privately, the loss to the general community of a citi-

2
zen possessing such natural gifts and acquired qualifications as
Mr. Carpmael possessed is greatly to be lamented and that in record-
ing its sense of this loss this Society begs leave to tender its
condolence to the bereaved family.

ALL of which is respectfully submitted.

(signed) *A. Elvins*
Chairman.

u

Rev Mr C. A. Shortt addressed the chair on the subject of filling the vacancy in the office of president and ~~was~~ ~~that~~ nominated for that position Larratt W Smith L.C. D.Ch.

Mr Arthur Harvey seconded the nomination, which was made unanimous.

The chairman having ruled that as there was but one nomination the election might proceed at once, Dr Larratt W Smith L.C. was declared duly elected president of this society.

The librarian reported a large number of exchanges received

Mr Harvey reporting his observations stated that he was unable now to see the south pole cap on Mars. Mr Elvins and Mr Lumsden corroborated this. The south cap was said to be now invisible in any telescope, it having waned under the summer sun.

Reports of observations of Mercury were received from several members. No one had however been able to note accurately the moment of first or last contact.

A part of the evening was spent in discussing questions in sideral

Astronomy. The subject was so interesting that it was thought advisable to devote an entire evening in the near future to short papers upon the stars and nebulae.

It was announced that at the next meeting Mr S. E. Peal's paper on the lunar markings would be read.

The meeting then adjourned till
Nov 27th

L. W. Smith
A. Spaulding
V.

The 23rd regular meeting of the Astronomical & Physical Society was held Nov 27th at the rooms 19 McGill St.

Dr. Lauratt W Smith L.C. president occupied the chair.

24 members were present

The minutes of the previous meeting were read and confirmed

Dr. Smith addressed the meeting, thanking the Society for the honour of election to the office rendered vacant by the death of Prof. Carpenter, whose loss was deeply deplored in the scientific field in Canada. Dr. Smith described also some observations made in Florida of the Zodiacal light and on the Atlantic Coast, of the Aurora.

M^r Ekins seconded by M^r Phillips moved that a committee consisting of the Librarian, Miss Gray, M^r Musson M^r Collins and M^r Lindsay be appointed to arrange the library and catalogue the works contained therein.
Carried.

Communications were read from Miss Clarke of London Eng who was unable this year to write a paper for the society owing to pressure of engagements; from Dr Morrison who asked whether a paper could be inserted in the Transactions on Perturbations of Satellites; from Prof. Keeler who asked permission to publish his paper on the "Telescope" in Astronomy and Astro-Physics from the Vatican Observatory in reference to the "unification of Time".

The Secretary was instructed to receive Dr Morrison's paper; to accede to Prof Keeler's request and to forward to the Canadian Institute the letter from Rome.

Mr G. H. Pursey seconded by Mr Arthur Harvey, nominated for the office of Vice-president Mr E. A. Meredith LL.D. who was by the unanimous voice of the meeting declared elected.

Mr R. Lyson 6 Harbord st was nominated for active membership by Mr Pursey and Mr Messon

The librarian presented his report of exchanges he received.

M^r Ekins called attention to the snow-cap now forming about the north pole of Mars and visible in a 3 inch telescope.

M^r R. H. Stupart reported having received notes of magnetic disturbances from the Commercial Cable Co and stated that there seemed to be now a period of comparative quiescence in magnetic conditions.

M^r Pursey referred to some observations of the Sun's surface and stated that he had been much interested in the rapid enlargement of some small spots he had been carefully watching from day to day.

M^r Hawley asked M^r Miller and M^r Lindsay to make measurements with the micrometer the angular dimensions of the Orion Nebula and to calculate the real dimensions on the basis of a distance about that of the nearest fixed star.

Observations of the Transit of Mercury had been made by Mr Donaldson of Turpan and Mr Cannon of Elora, from both of whom reports were read. Mr Cannon sent photos of the sun, with the planet on the disc.

Mr D. Hadden of Alta, Iowa also sent a report as also Mr M Winger of Cleveland Ohio.

The paper for the evening was one contributed by Mr R. E. Peal of Sibagar India on the "Markings on the lunar surface"

In connection with the paper the best photos of the moon were shown.

The paper was discussed by Mr D. J. Howell and others, Mr Howell holding that certain markings on the photos were not real but due to imperfections in the film.

The meeting then adjourned till Dec 11th

Wm. H. H. H. H.
for the Recording Secy.

Larrah Smith
President

The 24th regular meeting
of the Astronomical & Physical
Society held Dec 11th at the
rooms of Mr. Guise

the president Dr. Laurent Smith, Jr.
occupied the chair

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

Communications were read
from Mr. W. H. Downing

Dr. Jos. Morrison

Mr. John A. Copland

Rev. V. E. Espin

Mr. Espin announced the discovery
of a small red star not
mentioned in the Draper catalogue.

Mr. R. Tyson was elected an
active member of the society.
Mr. J. H. Lash of Toronto was
nominated for active
membership by Mr. John A. Paterson
and Mr. Thos. Lindsay.

Mr. Lindsay reported the progress
made by the library committee.

The subject of a frontispiece for
the annual Transactions was
discussed and it was decided

to print a portrait of the late president to face the title page of the volume.

The librarian reported several additions to the library.

The chairman then read ~~and~~ a paper by Sir R. S. Ball on "Life in other worlds"

A discussion followed in which several members took part.

The meeting then adjourned till Dec 27th at 2 o'clock

Arthur Lindsay
for the Recording Secy

A Harvey
Chairman

The 25th regular meeting of
the Astronomical & Physical
Society, held Dec 27th 1894
at the rooms 19 Melrose Toronto

Mr Arthur Hawley occupied the chair.

The minutes of the previous meeting
were read and confirmed

Mr J. H. Lash of Toronto and Miss
Clements ⁸⁸ ~~of Toronto~~ ^{Winnipeg} were elected
active members.

Communications were read:

From Dr Donaldson of Texas, reporting
observations.

From Mess Pooler Bros of Chicago announcing
the publication of their map of the moon;

From Prof Keller of Allegheny, containing
some valuable notes of ~~on the stars of~~
on the Orion Nebula.

From Prof Payne of Northfield, Minn.,
in reference to the predictions of the
configurations of Jupiter's satellites.

The nominations of officers for the
ensuing year was then proceeded
with; the result was as follows
for President Laurat W Smith 2c, Del.

Vice Presidents } J. A. Paterson M.A.
" } E. A. Meredith LL.D.

Treasurer Mr J. Goddard

Corresponding Secy. Mr G. L. Hunsden

Recording Secy Mr C. P. Spaulding

Librarian M^r G. G. Pursey
 assistants Miss Pursey and Miss Barnbridge
 Asst Secy and Editor M^r H. L. Laidray.

For the Council the following were
 nominated

C. A. Chant, Arthur Harvey, D. J. Howell,
 G. F. Hull, W. B. Musson, J. S. Ridout,
 R. F. Stupart, Rev. C. A. Short, J. Webber.

Miss ~~Laidray~~ ^{Mitchell} and ^{Laidray} ~~Mitchell~~ were appointed
 to audit the accounts of the Society.
 Mess Elvins & Laidray were appointed to
 inspect the properties of the Society
 and value the same.

A short article from Popular
 Astronomy was read, bearing
 upon the calculations of the
 occultations & eclipses of Jupiter's
 satellites.

M^r Elvins then read a short
 review of the discovery of the
 5th satellite of Jupiter; the question
 had come up whether Prof. Barnard
 had really made the discovery
 entirely unexpectedly or whether
 he had been led to search by
 having received letters from others
 upon the subject. An observer in
 Detroit, M^r Cartwright, claimed
 to have seen the shadow of the
 5th satellite with a six inch telescope
 some time before Barnard discovered
 the satellite itself.

Mr Elvins thought that the claims of Mr Cartwright had been ~~very~~ overlooked and was inclined to the opinion that justice had not been done that gentleman.

Mr Lumsden thought that Mr Elvins' own claim to having instigated the search for the satellite ~~was~~ ~~more~~ ~~clear~~ ~~than~~ was being overlooked by Mr Elvins himself.

Mr Lindsay agreed with Mr Lumsden and referred to the memorable meeting at Mr Pursey's residence in 1891 when Mr Elvins had read the paper in which he predicted the discovery of the satellites, ~~and~~ giving his reasons.

Mr Lindsay stated also his firm conviction that it was an utter impossibility for any observer to see the shadow of the satellite upon the disc of Jupiter.

The meeting then adjourned till Jan 8 1895 when the 5th annual meeting would be held.

John A. Gale
Vice Pres^{nt}

W. P. Spaulding