

*The Astronomical and
Physical Society of Toronto*

Minute Book

Feb. 25, 1890 — March 7, 1893
(1st meeting)

CHAMBERLAIN

Minute Book.

of

The Astronomical and Physical
Society of Toronto.

The
Astronomical and Physical Society
of
Toronto.

Constitution and By-laws.

Article 1 - Name and Objects.

1. The name of this Society shall be
The Astronomical and Physical
Society of Toronto.

2. The objects of this Society shall be: -
 - (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 this Society
in the form of Transactions, which
shall contain, such Notes and
Papers as shall have been approved
of for publication, and

 - (c) To

(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.

Article II. Membership.

1. This Society shall consist and be composed of Active, Life, Corresponding and Honorary Members. 1
2. Active members shall consist of persons who have been elected to membership and have paid their dues. The persons who shall make the Declaration for the incorporation of this Society under the provisions of the Revised Statute of Ontario Chapter 172, are hereby declared to be active members thereof, duly elected, and shall become fully qualified as such upon payment of their dues. 2
3. Life members shall consist of persons who have been elected to Life Membership and have paid the sum of Twenty dollars to the Treasurer of this Society. 3
4. Corresponding

- 4 Corresponding members shall consist of persons not residing in the City of Toronto who shall have been elected by the Society as such.
- 5 Honourary members shall consist of persons distinguished for their attainments in Astronomy and Physics who shall have been elected to Honourary Membership. The Honourary Members of this Society shall, however, at no time exceed ten in number.
- 6 Active members shall pay an annual fee of two dollars.
- 7 No member in arrears shall be entitled to vote at any meeting of this Society.
- 8 Corresponding and honorary members shall pay no dues and shall have no votes.
- 9 Candidates for membership in this Society may be proposed at any meeting by a mover and seconder in good standing and may be voted for at any subsequent regular meeting. The vote shall be by ballot and an assenting majority of the members present shall be required for an election. Each candidate shall on his election pay into the Treasury of this Society

Society the sum of Two dollars which shall be in lieu of his annual fee until the next first day of March following his election, and no accepted candidate shall be deemed to be an active member of this Society until he shall have duly paid in such sum.

10. Any active member may at any time commute his dues and by the payment of twenty dollars and upon the vote of this Society may become a life member thereof. 10

11. Any member desirous of resigning his membership in or of withdrawing from this Society shall give to the Recording Secretary due notice thereof and shall pay all arrears, if any, whereupon his membership shall cease. 11

12. If at any time the harmony, well-being, and best interests of this Society appear to require that any one or more of its members shall cease to be a member or members, the President, or other presiding officer, shall call a special meeting of the Society for the purpose of considering the matter and shall cause due notice thereof to be given. 12

such member or members, and if, upon due examination, the charge or charges shall appear to have been sustained, he shall thereupon invite such member or members to resign forthwith, and in default of such resignation the Society shall expel such member or members.

13. Any member who shall resign, withdraw or be expelled from this Society shall thereupon forfeit all interest in or claim to the property and funds of the Society.

Article III. Officers.

- 1 The officers of this Society shall consist of a President, a Vice-President, a Treasurer, a Corresponding Secretary, a Recording Secretary and a Librarian. These officers shall form the Council of this Society to which shall be committed the general management of its affairs. Three members of the Council shall form a quorum.

- 2 The President, or in his absence, the Vice President, or in the absence of both, any member of this Society appointed for the purpose, shall preside over its meetings. It shall be the duty of the
presiding

presiding officer for the time being to preserve order, regulate the proceedings of the meetings, and to exercise a general supervision over the interests of the Society.

3. Sec Treasurer shall receive and, 3
from time to time, account for all the moneys and such papers of the Society as shall have been committed to his custody, and, if required, shall give such security, as to the Society shall seem proper.

4. Sec Corresponding Secretary shall 4
conduct the official correspondence of the Society, and shall keep copies of all letters written by him, and shall preserve and index all communications received, and shall read such communications to the Society at the first regular meeting after such receipt.

5. Sec Recording Secretary shall keep 5
the Minutes of the Society, and shall have the custody of its records generally. It shall be his duty to notify members of the times and places for holding the regular meetings of the Society and, when required, by the presiding officer to do so, to call special meetings of the Society or of the Council, or both.

6. The.

- 6 The Librarian shall have charge of and be responsible for the safe-keeping and proper condition of the books, publications and apparatus of the Society and shall report to each regular meeting the names and number of such donations and publications as may have been received.
- 7 The Society may appoint such other officers as may appear to be required and may specify their duties, and may vary the duties of the officers composing the Council.
- 8 The presiding officer of this Society for the time being may appoint Special Committees to report to the Society upon any subject upon which it desires information or advice not within the province of the Council to procure.
- 9 The officers of this Society shall be chosen at its annual meetings which shall be held on the last Tuesday in the month of February of each year, at the hour of eight o'clock p.m., at a place of which due notice shall be given. Nominations shall be in writing and voting shall be by ballot. In the event of vacancies occurring during

during the year, the same may be filled at any regular meeting of the Society, the nominations and voting to be in due form.

Article IV. Papers.

1. The title of any Paper, Memoir, or other production by a member, intended to be read at a meeting of this Society, shall be submitted together with an abstract of its contents, to the Council, through the Recording Secretary, previous to the meeting at which it is to be read. The Paper if approved and read, shall be submitted to a committee, and on report of said committee, may be recommended to the Council for publication, either entire or in abstract in the Transactions of the Society.

Article V. Liabilities

1. No liability or obligation whatever, on the part of this Society shall be incurred, and no contract shall be entered into, or expenditure made unless and until such liability -
obligation

obligation, contract or expenditure has been recommended in writing by the Council and afterward approved by the Society at a regular meeting held after reasonable notice has been given to each member of the intention to submit at such meeting the subject of the approval of such liability, obligation, contract, or expenditure; this provision shall not apply, however, either to the incurring or the payment of any petty incidental expenditure which shall have been recommended by the Council.

Article VI. Powers of Revision.

- 1 The Constitution and By-laws of this Society may upon the recommendation of the Council, be amended by two-thirds of the members, at any regular meeting of which due notice has been given together with notice of the intention to submit thereto the expediency of making such amendment.

The above Constitution and By-laws were unanimously adopted by the Astronomical and Physical Society of Toronto

Toronto at the annual meeting held
on Tuesday the 25th of February 1890.

Roll of Membership.

We the undersigned having been elected
members of the Astronomical and
Physical Society of Toronto, and having
read the Constitution and By-laws
thereof do hereby sign the Roll of
Membership and agree to abide by
the said Constitution and By-laws.

	Charles Chapman	✓
W. J. Evans	41 St Vincent St	✓
* G. G. Pursey	189 McCaul St	✓
G. G. Munro	719 Ontario St	✓
D. J. Campbell	218 Bleeker St	✓
A. Miller	280 Carlton St	✓
* John G. Redout	22 King St E Tor.	✓
Thos Lindsay	39 Huron St	✓
D. Geo Ross	44 Isabella	✓
George Richardson	180 Euclid Ave	✓
G. D. Robinson	226 Runswick Ave	✓
R. Dewar,	75, 80, Park	✓
Darrence Bell	152 Cumberland St	✓
Adam Wilson	Corner Sp. & Chest St	✓
Stephen Huebner	93 Cumberland St	✓
John A. Gatersen	23 Walmer Road	✓
John Phillips	115 Victor Ave	✓
J. A. Livingston	2 Wilton Crescent	✓

Roll of Membership cont'd

Geo. R. Foster, 391 Yonge St.
 E. H. Madson
 R. J. Lupart, Observatory.
 J. Donaldson, Steeles
 Arthur Farnley, 21 Rosedale Road
 A. Cronberg, 71 King St. W.
 James Fodlunster, 85 Wellisley St.
 L. Carruthers
 R. O. Montgomery, 519 Parliament St.
 S. Michael, 47 King St. East.
 L. D. Proctor, St. Joseph, Miss.
 G. B. Abbey, Toronto
 W. A. Mitchell, do
 J. H. Mendels
 A. D. Watson, 10 Euclid Ave
 J. M. Clark, 467 Spadina Ave
 J. R. Key, 36 Avenue Rd., Toronto.
 Alexander Wilkes, 84 Gloucester St.
 Annie A. Gray, 19 Avenue St
 J. J. Layton
 Chas. Spaulding, 282 St. James' Sq.
 W. T. Tomlinson, 42 Grenville
 Joseph P. Clougher, 173 Union St
 J. F. McArthur, 288 Lansdowne Ave.
 Jean Tursey, 159 Mc. Carl St.
 Jessie P. Temple, 36 Baldwin St.
 Alice A. Gray, 40 Major St.
 W. L. Gilbert, 15 Ottawa St.
 C. J. Gilbert, 15 Ottawa St.
 R. B. Ellis, 14 Admiral Road
 J. A. Wood, 129 Elm St.
 F. Saunders, 169 Mc. Carl St.

Jessie Brodie	409 Parliament St -
W.B. Musson	145 Howland Ave.
J.R. Collins	172 Borden St

Toronto February 25th 1890

A meeting of the Astronomical and Physical Society was held on the above date at the residence of Mr G. E. Lumsden 719 Ontario St.

There were present Messrs Carpmael, Elvins, Pursey, Miller Lumsden, Lindsay, Howell Townsend Cassidy and Prof Richardson.

Mr Carpmael was requested to take the chair. The minutes of the last meeting were read and with an addition adopted. The committee appointed at the last meeting to draft a constitution and bylaws reported, that they had drawn up a constitution and by-laws copies of which were distributed among those present. The report was received

As all present had read the constitution and bylaws as submitted by the committee only those clauses which related to the Annual fee, life, honorary, and associate membership, and several of the more important features were read.

It was moved by Mr G. P. Pursey seconded by Mr^r Miller that the annual membership fee be two dollars: carried.

It was agreed that twenty dollars should be paid by a life member.

On recommendation of Mr Chas Carpmael a clause relating to the reading of papers was inserted

It was moved by Mr G. E. Lumsden seconded by Mr A. Elvins that the Constitution and Bylaws as read with these additions be adopted. Carried.

Note! The Constitution and Bylaws as adopted are engrossed in the front of this book. W. H. B. well recording secretary

Mr Carpmael having to leave Mr A. Elvins acted as chairman during the remainder of the meeting.

The election of officers was now proceeded with.

The following were nominated:—

President Mr Charles Carpmael M.A. F.R.A.S.
by Mr A. F. Miller seconded by Mr A. Elvins

Vice-President Mr Andrew Elvins
by Mr A. F. Miller seconded by Mr G. E. Lumsden

Treasurer Mr G. G. Pursey
by Mr G. E. Lumsden seconded by Mr Miller

Corresponding Secretary Mr G. E. Lumsden
by Mr A. F. Miller seconded by Mr G. G. Pursey

Recording Secretary Mr W. H. B. well
by Mr A. F. Miller seconded by Mr A. Elvins

Librarian Mr A. F. Miller
by Mr W. H. B. well seconded by Mr G. E. Lumsden

All of these officers were declared elected by acclamation.

A committee consisting of Mr A. F. Miller and Mr G. E. Lumsden was appointed to secure the incorporation of the society under the provisions of the Revised Statutes of Ontario Chapter 172.

A letter from Prof. Holden director of Lick Observatory California in response to an enquiry of Mr Howell relating to Moon negatives was read, he wished the society success and asked our acceptance of the Proceedings of the Astronomical Society of the Pacific for 1889 and the Eclipse report of 1889 published by the Lick Observatory, which were presented. The Corresponding secretary was directed to make suitable acknowledgement.

A portion of a meteorite showing large crystalline flakes on one surface was exhibited by Mr Lawson who wished to present the society with a portion of it but Mr Muller had been unable to get it cut although several experts had attempted to.

A paper was read by Mr Elvins from "The Globe", the writer of which was unknown. On the Probability of Great Discoveries in Astronomy during the next decade.

Prof Richardson was announced to read a paper on The Fractionating Process in In-organic Chemistry at the next meeting to be held at the residence of Mr G. G. Pursey 189 McCall St. The meeting adjourns to Tuesday March 11th /90.

D. Howell recording secretary

Confirmed

Charles A. Smith
President

Toronto Tuesday March 11th 1890

The regular meeting of the Astronomical Society was held at the residence of Mr E. G. Bursey 189 McCaul St.

Those were present. Messrs Carmichael, Elvins, Bursey, Muller, Howell, Redoubt, Lindsay, Phillips Moore, Armstrong, and Robinson.

The President in the chair. The minutes of the last meeting were read and confirmed.

The Librarian reported that he had received a manuscript copy of a Method of Computation of Eclipse Projection from the author Mr J. Lindsay. A radiometer some apparatus magnets an orthochromatic refractor some photographs and an almanac of 1769 containing astronomical data.

The committee on incorporation reported that they had appeared before Judge Mc Dougall with the Constitution and By laws with declaration and affidavit duly made and signed attested in duplicate. And that he had made the necessary declaration there on incorporating the society. One copy of these papers was deposited with the Registrar General of Ontario the other was now presented with registration certificate affixed. The report was received.

The question was raised as to whether those who were present at the last

meeting were members. It was agreed that those who were present ~~and~~ signed the roll and paid their dues would be considered active members.

A paper on "The Great Nebula in Orion" by Prof Pickering in the "Sidereal Messenger", and "An Account of a Photograph of the Sun's Surface" by Dr Janssen ^{and article by Langard} in "Knowledge" were read by the president.

There was some discussion on meteorites. Mr Carmichael gave an account of the great meteorite which passed near Toronto in 1884.

The paper by Prof Richardson on the "Fractionating Process in Inorganic Chemistry" was postponed until the next meeting at Mr A Elvins. The meeting adjourned to Tuesday March 25th/90.

W. J. Howell, sec. secy.

Erratum. On motion of Mr Muller seconded by Mr Lindsay the two secretaries were appointed a committee to have cards of invitation similar to those of the Astronomical Society of the Pacific printed.

confirmed Charles Carmichael
President

March 25, 1890
— (see cover)

REPORT OF SPECIAL COMMITTEE ON PRINTING.

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To the President and members of The Astronomical and Physical Society of Toronto.

Your Special Committee on Printing appointed by resolution at the last meeting of your Society, begs leave to make the following report:--

Estimates for cards similar to that of The Astronomical Society of the Pacific, hereto attached, were obtained from four printing offices. The prices varied greatly and were as follow:--

500 white cards,	\$ 1.75	to	\$ 3.50.
1000 "	3.00	"	5.50.
300 additional slips on paper,	.50	"	1.00.

The lowest estimates were received from Brough & Caswell who appear to be able to do well any work that may be given them.

Your Committee in the course of its enquiries, learned that five hundred copies of The Constitution and By-laws of your Society, prefaced by a brief circular which might be made to answer the purpose of the cards, could be printed in the form of a neat four-page octavo pamphlet, like that of The Astronomical Society of the Pacific, hereto attached, and at a cost which by comparison seemed so moderate, that your Committee felt it to be its duty to report the facts to your Society before taking any further steps under the resolution above referred to. The following estimates were obtained from Brough & Caswell:--

200 copies 4-page pamphlet,	\$ 3.50.
500 " " "	4.50.

Very much as usual

It appeared to your Committee that even though the cards were procured, it would be found in the near future to be in the interests of your Society to print off copies of its Constitution and By-laws for the information and guidance of its members as well as for the purposes of general distribution, and it was thought that if such a pamphlet were now issued as, say, "Publication No. 1" of your Society copies of it might with propriety be sent with introductory letters to such kindred Societies as your Society might wish to make aware of its existence and with which it might desire to exchange publications. The pamphlet would be of the standard book-size and could be bound with the subsequent publications of your Society. Having in view these considerations, your Committee was of opinion that as compared with purchasing the cards, the increased cost of printing, say, five hundred copies of the pamphlet would be more than counter-balanced by the advantages to be derived from the possession of the latter.

For the further information of your Society, your Committee ascertained that the cost of printing an eight-page pamphlet, should such a publication be at any time required, would be as follow:--

200 copies 8-page pamphlet,	\$ 6.00.
500 " " "	8.00.

and that the printing of post-cards would cost about \$ 1.75 per thousand, or for any number less than one thousand. A rubber hand-stamp for printing post-cards calling the meetings of the Society, would cost about \$3.

All of which is respectfully submitted.

D. J. Howell

For the Committee.

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Report of Special
Committee on
Printing

March 25th / 90



Toronto March 25th 1890

The regular meeting of the Astronomical and Physical Society was held at the residence of Mr Andrew Elvins 11 St Vincent St. There was a good attendance.

The President in the chair

The minutes of the last meeting were read and with three corrections ~~and~~ confirmed.

The following candidates were proposed for election ^{as active members} the names of proposers being appended

Mr Garnet B. Meldrum of Toronto

(Proposed by Mr Elvins and Mr A. F. Miller)

Mr John Phillips of Toronto

(Proposed by Mr Elvins and Mr A. F. Miller)

Mr D. J. Ross of Toronto

(Proposed by Mr G. E. Lemsdon and Mr A. F. Miller)

Prof. Richardson of Ontario Veterinary College

(Proposed by Mr G. E. Lemsdon and Mr Miller)

Mr Geo G. Bidout of Toronto

(Proposed by Mr A. Elvins and Mr G. E. Lemsdon)

Mr Thos. Lindsay of Toronto

(Proposed by Mr A. Elvins and Mr G. E. Lemsdon)

Mr G. B. Robinson of Toronto

(Proposed by Mr A. Elvins and Mr G. E. Lemsdon)

The report of the special committee on Printing was given by Mr Lemsdon the written report having been mislaid but is now in the keeping of the secretary

The report was received

It was moved by Mr A. Elvins seconded by Mr G. B. Pursey That the committee

It was pointed out that only the ~~names~~ who had made the application for incorporation were constitutionally members and that all others would have to be proposed and elected in the manner prescribed in the constitution and by laws.

be instructed to have 500 copies of the Constitution and Bylaws printed with a brief circular as recommended in their report, and an additional 300 copies of the circular be printed on separate paper, carried

It was moved by Mr D. Howell seconded by Mr G. P. Pursey, that Cosmic Time be used by this society in its proceedings carried

Prof Richardson gave a very interesting account of, The Fractionating Process in Inorganic Chemistry.

A paper on Spectroscopy by Mr A. F. Miller was announced for the next meeting Tuesday April 8th at the residence of Mr Miller 280 Carlton St.* The meeting then adjourned.

D. J. Howell recording secretary

* An invitation was extended by Mr Chas Carlmael MA F.R.S. director of the observatory Toronto to hold the meeting of April the 22nd at the observatory which was gladly accepted

Confirmed Charles Carlmael

President

At the regular meeting of the Astronomical and Physical Society of Toronto held on Tuesday April the 8th at the residence of Mr A. F. Miller 280 Carleton St.

The president Mr Charles Campbell M.A. F.R.S. in the chair.

The minutes of the last meeting were read and confirmed.

Mr Garnet H. Meldrum of Toronto

Mr John Phillips of Toronto

Mr H. D. Ross

Prof. Gordon Richardson of Ontario Veterinary College

Mr Jas. G. Ridout

Mr Thomas Lindsay

Mr G. H. Robinson

all of Toronto

were duly elected active members of the Society.

The following candidates for ^{active} membership were proposed for election the proposers names being appended.

Mr R. F. Shepart of the Toronto Observatory
by Mr A. Elvins and Mr G. G. Pursey

Mr Lindsay

by Mr G. G. Pursey and Mr A. Elvins

A communication from Mr Turnbull offering to read a paper on Lunar Dynamics and Lunar Modern Helinography was read and on motion of Mr A. Elvins seconded by Mr G. G. Pursey Mr Turnbull's offer was accepted, the paper to be read at the second meeting hence

Mr Lindsay on the half of the Committee

on printing reported that when the Constitution and Bylaws were set up there was no room for intended circular so that it is omitted in the first publication now presented and recommending that a circular be prepared and printed separately. The report was received. It was moved by Mr. Lumsden seconded by Mr. A. F. Miller that the circular as recommended by the committee be printed carried.

A paper, "An entitled "An introduction to the use of the Spectroscope" was read by Mr. A. F. Miller, and which he illustrated by numerous diagrams and experiments after which the spectra of several gases by the aid of a 4 celled battery and a Rumford coil among which were those of Nitrogen, Hydrogen ^{and} Carbon monoxide and of some of the metals, Sodium lithium, carbon, Magnesium Barium and nickel, Iron, and a fragment of a meteorite. Mr. Miller's paper was listened to with great attention and was thoroughly appreciated. It forms the first of a series which we may expect on Spectroscopy. The next meeting was announced to meet at the Toronto Observatory, Queen's Park Tuesday April 22nd. Meeting adjourned

D. B. Howell
Sec Secy

Charles J. Smith
President

On Tuesday April 22nd 1890 The Astronomical and Physical Society met at the Toronto Observatory Queens Park at the invitation Mr Carmichael M.A. F.R.A.S. the director and ^{the} president of the society. A very instructive and enjoyable ~~and~~ evening was spent. The fine telescope was directed to the moon and every member had an opportunity to observe it with low and moderately high power eyepieces. Saturn was also seen to advantage although the ^{atmosphere} ~~air~~ was not in the best possible condition.

The splendid mechanism of the mounting, ~~was explained~~ was of great interest. The director carefully explaining the beautiful correctness and ease of adjustment of the telescope and its attachments.

The valuable photographs of the Sun's Spectra ^{in the observatory} were examined and were of great interest to some of the members.

The Transit instrument and Chronograph in another part of the building were next visited and the method of transit observation and time correction was fully and clearly explained by Mr Carmichael.

After which the society assembled in one of the offices of the observatory and came to order.

The president Mr Chas Carpmael
M.A.; F.R.S. in the chair

The minutes of the last meeting
were read and confirmed.

Mr R. F. Stupart and
Mr J. Linden

were duly elected active members
of the Society.

Mr J. S. H. Shearman of Brautford
was proposed by Mr A. F. Miller and
Prof Richardson, as an ~~associate~~
~~member~~ corresponding member

On motion of Mr J. Linden
The Treasurer was instructed to
pay the account for printing

It was decided that the next
regular meeting should be held at
the residence of Mr Howell 218
Bleeker St May 6th

The vice president at this stage
took the chair and on motion of
Mr Miller seconded by Mr Pursey
a cordial vote of thanks was
tendered to Mr Carpmael for the
delightful and profitable evening
which we had ^{been} enjoyed. Mr Carpmael
responded after which the meeting
adjourned.

L. J. Howell
Sec Secretary

Charles Carpmael

The regular meeting of the Astronomical and Physical Society held at the residence of Mr Howell 218 Bleeker St Tuesday May 6 1890. The president Mr Chas Carpmael M.A. F.R.A.S. in the chair. The minutes of the last meeting were read and confirmed. Mr J.S.H. Shearman of Brantford was duly elected as a corresponding member.

Mr R. Dewar

proposed by Mr Carpmael and Mr Elvins for active membership.

Mr Andrew. F. Hunter B.A. of Barrie

proposed by Mr Miller and Mr Elvins

Mr A.K. Winder of Detroit

proposed by Mr Elvins and Mr Miller for a corresponding membership.

The Librarian reported that the proof sheets of a paper on Meteors and Comets by Prof D. Kirkwood LL.D published in the Danville Review in 1861 had been presented to the society by Mr A. Elvins.

A paper by Mr J.S.H. Shearman of Brantford: On Photographing the Corona of the Sun was read by Mr Miller who also gave an account of some of Mr Shearman's work in this line, he using a very small aperture without lens and obtaining by long exposures an image of the corona. ~~Thereafter~~ After some comments and discussion on Motion of Mr Lumsden ~~Secondly~~ It was resolved that the thanks of the society be rendered to

Mr Shearman for the interesting paper and that the society trusts that he may be successful in his further researches"

Mr A. F. Hunter B.A. of Barrie presented through Mr Miller some newspaper cuttings and personal notes on some recent Atmospheric phenomena at sunset in Barrie & Onelia.

The next meeting May 20th was decided to be held at the residence of Mr Pursey when a paper on Variable Stars will be read. The meeting then adjourned.

A. J. Howell
Rec^d Secy

A. J. Howell C. P.

The regular meeting of the Astronomical and Physical Society was held at the residence of Mr G. B. Pursey 189 McCaul St Tuesday May 20th 1890.

The Vice President Mr A. Elvins occupied the chair

The minutes of the last meeting were read and confirmed

Mr R. Dewar was duly elected an active member

Mr Andrew F. Hunter B.A. of Barrie was duly elected a corresponding member

Mr A. K. Under of Detroit-Mich was duly elected a corresponding member

Mr Sanford Fleming ^{C.E. C.M.S. L.L.D} proposed as an honorary member by Mr Chas Capmael M.A. F.R.A.S. and Mr A. Elvins

Prof. Daniel Kirkwood L.L.D. Riverside California proposed as an honorary member by Mr A. Elvins and Mr A. F. Miller.

A communication from Mr Hunter was read containing some comments on Kedzie's Book

Mr Pursey read a paper from ~~Mr Hunter~~ Knowledge on Variable Stars by A. C. Rayward and C. E. Beck and ~~Mr~~ also a paper on the Eclipse of Algol by Royal Hill was read. The subject aroused so much interest that it was decided to continue it at the next meeting to be held at the residence of Mr Cummins 719 Ontario

W. J. Howell ^{Secy}

Confirmed

A. Elvins

The regular meeting of the Astronomical and Physical Society was held at the residence of Mr. Crumden 719 Ontario St on Tuesday June 3rd 1890

The Vice President Mr. Elvins occupied the chair

The minutes of the last meeting were read and confirmed.

Prof. Daniel Kirkwood L.B.D. of Riverside California was duly elected an honorary member of the society

It was agreed on the suggestion of Mr. ~~Crumden~~ ^{Ross} that Sanford Flemming be communicated with asking his permission to make him an honorary member.

Mr H. Pettit of Belmont. Ont was proposed by Mr. Miller and Mr. Pursey as a corresponding member

Mr Jno. Goldie of Salt Ont was proposed by Mr. Miller seconded by Mr. Elvins as a corresponding member

Communications were received and read from Mr. Shearman of Brantford in which and from Mr. Kuntin of Barrie

Mr. Miller gave an account of a very brilliant shooting star which he had observed on May 20 at 20.30.

Mr. Crumden gave reported ^{observing} a meteor with a very erratic course.

Mr. Howell gave an account of his first observation of Sun Spots.

A suggestion was made by the vice-president as to an open meeting which could be held in the Normal School Grounds

A paper entitled "A New Type of Double Star," being an account of the observations and conclusions of Prof. Pickering of Harvard Observatory, in connection with the Draper Memorial was read by Mr Lunsden.

There was some discussion ~~which~~ and questions were ~~asked~~ asked by some of the members showing the interest ^{with} which the paper was received

It was decided to hold the next meeting at the residence of Mr Elvins 11 St Vincent Tuesday June 17th

The meeting then adjourned

W J Howell recording secy

A. Elvins.

At the regular meeting of the Astronomical and Physical Society held at the residence of Mr A. Elvins 11 St Vincent St June 17th/90
 The Vice-president Mr A. Elvins in the chair
 The minutes of the last meeting were read and confirmed

Sanford Fleming Esq C.E. C.M.P. L.L.D.
 of Kingston was duly elected an honorary member of the Society

H. Pettit Esq of Belmont was and

Jno. Goldie Esq of Pulk

were duly elected corresponding members of the Society

It was moved by Mr Muller seconded by Mr G. Pursey that a committee composed of Mr Elvins and Mr Cunningham should wait on Prof Baudin relative to his joining the society. carried

Communications were read from ^{Mr Paul} the Librarian of the Washington Observatory. Mr J. G. Porter of the Cincinnati Observatory.

T. S. H. Sherman of Bradford

The Librarian reported having received the following:-

From the Washington Observatory through the Smithsonian Institute
 Washington Astronomical and Meteorological Observations for

1845. 1844. ^{1851-2 1864, 1863.} 1868. 1872. 1873. 1875. 1876. 20th
 1877. 1878. 1879. 1880. 1881. 1882. 1883.
 Total Eclipses of 1878. Catalog of Stars 145-1877

and the following pamphlets:-
 Two on Longchute, Paches Comet,
 Fundamental Stars, Multiple Star 748
 Solar Parallax, Double Stars.
 Annular Eclipse 1885, Two on Parallax of Star (Hale)
 Comet of 1882
 Transit of Mercury 1878. 33 vols
 From the Lick Observatory
 Publications Vol 1.
 From the Cincinnati Observatory
 Three Pamphlets on Double Stars
 Two " " Observation of Comets
 One " " Zone Catalog. of 4050 Stars

It was moved by Mr Miller seconded by
 Mr J. Bidout and resolved that the thanks
 of this Society are due to
 Director of the United States Naval
 Observatory for the very generous and
 valuable contribution to its library of
 thirty three volumes consisting of
 Annual Reports and Appendices issued
 by the Observatory and forming the
 most complete set of its publications
 that can now be supplied, and that the
 Corresponding Secretary be instructed
 to acknowledge the receipt of the same
 and to express the Society's sense
 of its obligation therefore.

It was moved by Mr G. P. Pursey and
 seconded by Mr A. Hewar and
 Resolved that the thanks of this

Society are due and be tendered by the Corresponding Secretary to Professor J. G. Porter, Director of the Cincinnati Observatory, for the valuable contribution to its library of the Publications of the Observatory being numbers 5 to 10 inclusive, and for the intimation that the name of the Society has been placed on the Observatory's list so that it may receive all subsequent publications.

It was moved by Mr. D. Howell and seconded by Mr. G. G. Pursey and resolved that the thanks of the Society are due and be tendered by the Corresponding Secretary to the Prof. Holden Director of the Lick Observatory for the valuable contribution to its library of the Publications of the Observatory.

These resolutions were carried unanimously.

The proposal to hold an open meeting in The Normal School Grounds or a more suitable place was dropped for the present.

Mr. Howell through the kindness of the Amateur Photographic Society showed the Chicago Southern Slide Club's set of slides which included one photo of the moon.

taken in the Large Beck Telescope
and made by Mr Burnham also
another of his of the Beck Observatory

It was decided to hold the next
meeting at Mr Millers 280 Carlton St
on July 15th to which date the
Society adjourned

The members of the society agreed to accept
Mr Turnbulls invitation to inspect his Globes,
Ref. Bowell and Telescope on Tuesday 24th

Sec. Secy

A. G. Green

An Informal meeting of the
Astronomical & Physical Society was
held at the residence of Mr
Turnbull #8 Bellevue Ave
on Tuesday June 24th to
when the members inspected
Mr Turnbulls mounting of a
six inch reflector and his
astronomical Globes ~~There~~

All were pleased by the workman-
ship and ingenuity ~~and~~ ^{displayed} ~~in~~
~~which~~ Mr Turnbull explaining in
a satisfactory way the advantages
of the principle of mounting and
of the construction of his wonderful
globes.

The regular meeting of the Astronomical and Physical Society was held on Tuesday July 15th 1890 at the residence of Mr A. F. Millar 280 Carlton St.

The Vice President Mr A. F. Elvins in the chair.

The minutes of the last meeting were read and confirmed.

Communications were received from Mr T. S. H. Shearman, relating to his paper on the Sun which will be read at an early date; from Mr Brazier of Allegheny re telescope objectives of Jena glass. and from Prof David Kirkwood L.H.D. accepting his election as an honorary member.

The Corresponding secretary was requested to get write to Mr Brazier for prices of objectives of from 3 to 5 inches in diameter and as to their lasting qualities. The Librarian reports the receipt of the following:-

From Prof Pickering of Harvard Observatory:

Four parts of The H. G. Draper Memorial
Seven parts Annual Report of the Director

One part Statement of Work done
1897-1898

From Prof Holden Lick Observatory
Vol 2 Publications of the Astronomical Society of the Pacific

The suggestion of Mr. Kunsden re Book Case being seconded by was received as a notice of motion

The paper of the Evening was then read by Mr. Millar being the second part of an Introduction to the use of the Spectroscope. The paper was very well received and many of the phenomena referred to were demonstrated with added clearness by diagrams and experiment. With his fine instrument and most complete arrangement of apparatus many of the experiments were ably and successfully carried out.

The spectra of the following were shown, Sodium first its ~~its~~ bright lines superimposed upon the bright ~~continuous~~ continuous spectrum and again by means of sodium vapor its ^{line of} absorption ~~at~~. Iron Line Copper and others. The meeting adjourned to ~~on~~ July 29th at the residence of Mr. Swungstone Willow Crescent

A. G. W. V. P.

Oppowell Rec. Secy.

A meeting of the Astronomical and Physical Society, was held at the Observatory on Tuesday evening August 12th.

In the absence of the director Prof Carmichael (~~who is also the president~~), the members were received by Mr F. L. Blake D. S., of the Observatory Staff, who with much kindness and courtesy, placed his time at their disposal. Naturally the admirable six inch equatorial telescope was first employed, and Mr Blake not only exhibited a number of objects by its aid, Venus, Mars, and especially Jupiter, being beautiful sights, but drew attention to the most important features of its exact and perfect mechanism; and especially to the appliances whereby the precise instant of any observed phenomenon can be electrically recorded.

The Clock room was next visited and the use of the sidereal and mean time clocks their electrical connections and automatic records on the chronograph were explained. The Transit room next received attention Mr Blake humorously remarking as he unclashed the narrow shutters that he was opening the meridian of Toronto. By aid of the star tables kept in the room the transits of clock stars can be observed at almost any hour of the day or night and after

a very brief delay one of these objects was seen transiting the field of the instrument. The method adopted for recording this class of observation with the most perfect precision was lucidly explained by Mr Blake, to whom at the close of the evening a hearty vote of thanks was tendered by the society.

A. P. H. W.

W. J. Hamell secretary

The regular meeting of the Astronomical and Physical Society was held at the residence of Mr. Allison, 11 St Vincent St on Tuesday August 26th at 20 o'clock.

The vice president in the chair

The minutes of ~~former~~^{the} two last meetings were read and confirmed.

A communication from Prof. O. Peters of Balzkamp Halstien was read in which he presented the society with photographs and drawings of the last occultation of Jupiter.

The corresponding secretary was instructed to forward suitable replies.

A communication from Mr. J. G. Galdie of Salt was read ^{accepting his election as} corresponding member.

Mr. S. J. Roberts wrote describing an observation of a remarkable lunar rainbow.

Mr. Turnbull showed drawings of Jupiter and photo of the

Transit of Venus
 a paper by Mr L. S. Shearman
 of Brantford "On Photographing the
 Corona of the Sun by means of a small
 aperture." was read by Mr Miller
 in which it was shown that in
 a number of experiments ~~success~~^{promising}
^{results} had been obtained

The meeting adjourned to Tuesday
 Sept 9th

confirmed A. Brown N. Pres

D. J. Howell Secretary.

The regular meeting of the Astronomical and Physical Society was held on Tuesday Sept 9th at the residence of Mr Gumsden 719 Ontario St

There was a good attendance, several ladies were present among the visitors

The Vice President occupied the chair. The minutes were read and confirmed

The Librarian reported the receipt of the following books: ~~received~~ since the last meeting:-

Washington Observations 1884

Washington Observations 1885

Appendix I Title:-

International Astrophotographic Congress

Appendix II Title:-

Saturn and its Rings 1875-1889 by Hall

It was decided to purchase a bookcase for the Society's library and the following resolution moved by Mr Lumsden seconded by Mr Muller, was carried

"That a special assessment payable to the treasurer on notice be made upon the members of the Society for the purpose of procuring a bookcase for the Society's Library"

Relative to Prof Lander's ~~concern~~ becoming a member Mr Collins reported that he had been unable to communicate with him owing to the Professor's absence from the city

Mr A. S. Muller ~~gave~~ notes of observations on the Sun spot groups of Aug 25 - Sept 8 / 90 in which he stated that the predictions of ~~our~~ our vice president and others, some time ago that we might shortly anticipate an increase in the number of Sun spots, seemed to be meeting with fulfilment, He drew attention to the circumstance that the spots which had just traversed the sun's disc were of very irregular and fantastic form surrounded by many faculae and that the large spots were attended by many smaller ones. The rapid change of the form and finer details gave evidence of great solar activity. The spectra of these spots ~~were~~ were remarkable showing to a greater degree the broadening of certain lines than he had observed for three years

Mr Lumsden reported that while

observing the minimum of Algol^{he} ^{August 11th}
 had seen 92 meteors in the course
 of one hour and 45 minutes one
 appeared to come directly in the line
 of sight and three passed across the
 sky in the same course with very
~~short~~ intervals of less than a second.
 The radiant point of many was in
 Pegasus and some in Auriga.

Mr. Lumsden read a paper by J. E. Gore
 F.R.S. on Binary Stars from "Knowledge"
 which was of great interest some
 discussion followed.

The meeting adjourned to meet at
 Mr. Pursey's House (Sept 23rd)

L. Howell Recording Secretary

Confirmed
 A. Evans

The regular meeting of the Astronomical and Physical Society was held at the residence of Mr. G. P. Pursey 189 Mt. Caulsb on Tuesday Sept 23rd

The first part of the evening was spent in viewing the moon Jupiter etc through Mr Elvins' and other new telescopes.

The vice president Mr Elvins occupied the chair. The minutes of the last meeting were read and confirmed.

Clarence Bell of Toronto was proposed as an active member by Mr Lumsden and a communication from Mr Brazier relative to the qualities of the Jena glass objectives and prices was read.

The committee to purchase a book case reported that after enquiries they had ordered one to made to cost about \$5²⁵ and rod & curtain extra.

Mr Lumsden gave notice that at the next meeting he would move for a committee to consider and report upon the best means of promoting and encouraging among the members the study of Astronomy.

Mr Muller reported that he had watched for the return of the spots which were due on Sept 19th or 20th he saw a group of faculae but no spots were visible.

Mr Lumsden had observed ^{on the 23rd of Oct} a brown band on the moon ~~extending from~~ a dark hood & break of light from the commencement in the foot hills to the south & south east. It was a narrow band of the lower crustum (amber brown) at places, bright appeared elsewhere. It was visible on the 23rd of Oct. It was observed by Mr Lumsden on the 23rd of Oct.

Mr Elvins mentioned that he had some time ago observed the Pleiades occulted by the moon all but one of the stars disappearing instantly this reappeared apparently within the moon's limb.

Selections were read from Chambers Astronomy giving accounts of similar phenomena but ^{no} none ^{was} gave the observation of more than one star.

A portion of a paper by A.C. Ranford on Some recent Advances in mapping of the Solar Spectrum was read which ^{called} ~~desert~~ forth considerable comment, Mr Deswell offered to give some information on Orthochromatic photography especially as to the making of plates sensitive to the less refrangible end of the spectrum.

It was decided that the next meeting be held at the residence of Mr Howell 218 Bleeker St and the following at Mr Ridout's. The meeting adjourned to Oct 7th.

W.P. Howell Recording Secretary

Confirmed
A. Elvins

The regular meeting of the Astronomical and Physical Society was held at the residence of Mr D. J. Stearns 218 Bleeker St on October 7th. The Vice president Mr A. Elvins in the chair.

The minutes of the last meeting were read and confirmed.

Mr Clarence Bell was duly elected as an active member.

Sir Adam Wilson was proposed for active membership by Mr A. Elvins and Mr F. P. Pursey.

Communications were received ~~from~~ and read from Mr Jno A. Patterson and from Jos Morrison Esqr M.D. of the American Nautical Almanac Office Washington in which he wished the society success and presented the following books to the library:

American Ephemeris and Nautical Almanac for 1890. 1891. 1892
and the American Nautical Almanac for 1893
also Report of Observations of the Total Eclipse of the Sun 1889.

Mr Miller stated that he must have been mistaken in ~~state~~ reporting the non-appearance of the group of sun spots which were expected Sept 20th as he saw them on the Thursday (25th) following well in from the limb. He was unable to account for their not being visible at his previous observation.

Mr Lumsden reported that Mr Houston had spoken to him relative to the plan which had been adopted in connection with some of the American Universities of College extension which he proposes to bring before the senate desiring to know if the society would support the movement.

It was moved by Mr P. Lumsden seconded by Mr Clarence Bell that a committee be appointed by the president to consider and report upon the best means of carrying out the objects of the Society carried.

The Chairman appointed the following

Mr P. Lumsden

- R. Dewar
- D. P. Howell
- Clarence Bell
- T. Lindsay
- A. F. Miller

Mr Houston's suggestion was referred to this committee

Mr Howell gave a brief account of Orthochromatic method in Photography showing samples of the ordinary and stained plates as well as some negatives taken with both kinds and the resultant prints. The next meeting ~~was~~ to be held at the Residence of Mr Ridout. Oct 21st. to which the meeting adjourned

H. G. Howell Rec. Secy.

A. J. Davis

The regular meeting of the Astronomical and Physical Society was held at the residence of Mr J. P. Ridout 47 Beverly St on October 21st 1890.

The Vice President Mr A. Elvins occupied the chair until the arrival of the President Mr Canham.

The minutes of the last meeting were read and confirmed.

Sir Adam Wilson was elected an active member of the society.

Mr ^{Stephen} Huebner of 93 Sherborne St was proposed for active membership by Mr Canham and Mr J. P. Ridout.

Communications were read from Sir Adam Wilson, J. J. Wadsworth M.A. M.B. of Geneva and R. J. McNeillan of Dundas.

The Librarian reported that the bookcase ^{which} was completed and delivered, was entirely satisfactory and that the rod and curtain would be added, giving it the desired finished appearance.

The committee appointed at the last meeting to consider the best means of carrying out the objects of the society reported through the convenor Mr Canham. The report was received and on ~~ref~~ motion of Mr Elvins seconded by Mr Canham they were requested to continue, prepare a complete list as suggested in the report and report in full at the next meeting.

Mr Muller read an extract from a letter which had received from

Mr T. S. H. Shearman of Brantford stating that he had observed similar phenomena in connection with the group of Sunspots as reported by Mr Miller

Mr Miller stated that a group of spots had just come around the ~~sun's~~ limb and were now visible on the Sun's disc

Mr Elvins observed an aurora on Friday the 17th and stated that considerable magnetic disturbance had been registered at the observatory on that date and pointed out the coincidence of the appearance of the group of spots referred to by Mr Miller

Mr Elvins stated that the proprietors of the College of Commerce had asked him if ~~it~~ a lecture or entertainment could be arranged to be given at their institution during the winter by some of the members of the society. He also called attention to the photographs of the moon by the Brothers Henry of Paris a copy of which appeared in ~~that~~ the last number of Nature.

Mr Curpinal stated that some one had received a letter from a gentleman in London ~~but~~ relating to a telescope which he wished to dispose of. he had recommended the sending of it down here so that it could be examined with a view to purchase. Mr Pursey & Mr Howell

stated that the Young People of the Unitarian Church wanted some one to give a lecture on some Astronomical subject

A paper by Mr J. G. Bidont on Solar and Lunar parallax with special relation to the transit of Venus in determining it, was read. It was received with careful attention. The discussion which followed was taken up by Mr Cardinal Mr Lindsay and others. The next meeting to be held at the residence of Mr Miller Carleton St Nov 4th to which date the meeting adjourned.

W. Howell Recording Secretary.

Confirmed

A. W. W.

The regular meeting of the Astronomical and Physical Society, was held at the residence of Mr A. F. Miller 280 Carleton St. Tuesday Evening Nov 14th and was well attended.

At the opening of the meeting the Vice President occupied the chair which he vacated on the arrival of the President.

The minutes of the last meeting were read and confirmed.

Mr Stephen Hiebner of Toronto was duly elected an actual member.

Mr Seiler was proposed for active membership by Mr Hiebner and Mr Lumsden.

Communications were received and read from Mr C. A. Harrison of Chipeway Falls and Mr Patterson.

The Librarian reported the receipt of No 10, Vol 2. of the Proceedings of the Society Astronomical Society of the Pacific.

The Committee appointed Oct 9th to consider and report on the best means of carrying out the objects of the Society presented their report which was read by the chairman convenor Mr Lumsden and on motion of Mr Lumsden seconded by Mr Miller was received and adopted.

It provides for a new order of business and a partial program for some three months, which goes into effect from the next meeting.

To the President of

The Astronomical and Physical Society of Toronto.

Your Committee appointed to consider the means by which the objects of your Society may best be promoted, begs leave to make the following Report:--

A well attended meeting of your Committee was held during the evening of the 15th instant. Many practical suggestions were submitted and discussed. After careful consideration, it was decided to respectfully urge upon the attention of your Society the desirability of introducing a few changes, calculated, in the opinion of your Committee, to still further stimulate members to take a more active interest in its work and, thereby, in each case make the success of your Society a personal matter. It seemed to your Committee that while it would be injudicious even to appear to impose upon members any conditions to be met, or duties to be performed, it would be highly expedient to cause it to be understood that your Society will welcome any attempt on the part of any one to make its meetings interesting and profitable. It was thought something might be gained by inviting the preparation of papers upon astronomical and physical subjects; by framing a List of the regular meetings of your Society for a purpose to be again referred to; by occasionally holding meetings of an open or conversational character; by asking and

answering questions of general interest; by permitting members under certain circumstances, to read selected papers, and, last but not least, by impressing upon members the great advantage to be derived, individually and collectively, from regular attendance upon the meetings of your Society.

Your Committee therefore begs to recommend:--

1. That while continuing the practice of reading and discussing from time to time such articles of merit as appear in the publications of the day, it be the policy of your Society to encourage, within reasonable limits, the preparation of original papers upon astronomical and physical subjects.

2. That a List of the Dates upon which the meetings of your Society will fall during the winter be made out and that each member, whether your Society is accustomed to meet at his house or not, be requested to permit his name to be entered in said List opposite the date or dates upon which he expects to be able to read a paper, original or otherwise.

3. That the subject of such paper be, as soon as is convenient, submitted through the Recording Secretary to the Council to be entered in said List and announced to your Society.

4. That at the discretion of the President, one meeting in three be, in advance, declared to be an open or conversational meeting at which general discussions may take place and questions,

submitted in writing at previous meetings, may be answered.

5. That if the questions so submitted be such as require study or research, it be discretionary with the President to refer them to such member or members as shall be willing to prepare answers to them.

6. That at each meeting of your Society, members be afforded an opportunity to announce any predicted astronomical phenomena that shall have come to their knowledge and be visible at Toronto.

7. That members be desired to report their observations reading and handing to the Recording Secretary, whenever practicable synopses in writing.

8. That members be requested to be as regular in their attendance as circumstances will allow, inasmuch as well attended meetings cannot fail to stimulate to still greater effort those who endeavour to make said meetings both pleasant and profitable.

9. That hereafter, at the hour of 20 o'clock, the meetings of your Society be punctually called to order by the senior member of the Council present.

All of which is respectfully submitted.

Chairman.

Toronto, 21st October, 1890.


To the President of

The Astronomical and Physical Society of Toronto.

Your Committee appointed to consider the means by which the objects of your Society may best be promoted, begs leave to present its Second Report, as follows:--

At a well attended meeting held on the 29th ultimo, your Committee carefully considered Mr. Elvins' motion referred to it on the 21st of that month, and, with a view to giving due effect to Mr. Elvins' suggestions, now begs to recommend for adoption an Official List of the Meetings to be held during the Year 1890-1891, and a new Order Paper framed to enable your Society to carry out such of the previous recommendations of your Committee as appeared to be favourably received by your Society.

All of which is respectfully submitted.


Chairman.

Toronto,

4th November, 1890.

Report of Committee
to consider the best
means of carrying out the
objects of the Society.

^c
1854/90

G. S. Saunders
Chairman

Mr Muller gave notes of Solar observations Oct 20th to Nov 4th. The group of spots appeared on Oct 19th disappeared by rotation Nov 1st showing rapid and important changes in the chief spots which during its progress changed from an irregular and elongated to a nearly round form. Spectroscopic observations were prevented by clouds.

A paper on Observation of the Solar Corona by Florence by Mr T S H Shearman was read in which he described his method of and results obtained.

A paper, being the first of a series, on Moving Matter was read by Mr Elvins and illustrated by apparatus. He ~~also~~ devoted his attention to the first Law of Motion.

A discussion took place at the close in which quite a number of the members took part. The next meeting was to be held at the residence Observatory on November 18th to which date the ~~the~~ society adjourned.

Confirmed
A Elvins

P. J. Howell Recording Secretary.

The regular meeting of the Astronomical and Physical Society was held at the Observatory November 18th 1890

The Vice President occupied the chair

The minutes of the last meeting were read and confirmed. The name of Mr Seiler was ~~not~~ left over as the proposer was absent ~~Mr Seiler~~ was proposed by Mr Foudray & Mr Gundersen. Mr G. E. Gundersen stated that some time ago he wrote to Mr A. C. Ranyard editor Knowledge relating in reference to the astronomical predictions contained in that publication. He read the reply in which Mr Ranyard stated that they would not be able to make the change suggested but would try to issue earlier. Some discussion arose relating to the postal service.

The Librarian reported the receipt of the following volumes from the Smithsonian Institute. An Investigation of the Orbit of Uranus (Newcomb) Tables of atmospheric Temperature in the United States (Schott) Statement of Certain Harmonies of the Solar System (Alexander) Planetary Motion (Newcomb) Planets (Starkwell) Secular Variation of the Elements of the Orbits of the Eight Principal Investigations of the Orbit of Neptune (Newcomb) Astron. Observations in the Arctic Seas (Kane) On the relative intensity of heat and light of the Sun upon different latitudes (Meach) On the Construction of a Silvered Glass Telescope (Prater) Tables of Precipitation of Rain & Snow in U.S. (Schott) and 16 pamphlets on 6 Temperatures Charts. Mr Foudray gave several predictions of occultations by the moon several copies of which were distributed among the members.

A the time of a minimum of Algal was given.

Mr Gundersen reported having observed a fine aurora on the 13th also the appearance of a dark red meteor.

on the 12th inst at 8.15 slowly passing from a point in Aries to a point in Aquarius the path of which remained luminous for some moments.

Mr Pursey tendered his resignation^{as Treasurer} to the president, it was decided to refer the matter to the council

A paper by Prof Young in the Forum entitled "The Latest Astronomical News" was read. It was received with interested attention. The ^{next} meeting to be held ^{Dec 2nd} at the residence of Mr Lumsden 719 Ontario St to which ~~that~~ the meeting adjourned

W. Howell Recording Secy

Confirmed

A. J. W. M.

A meeting of the Council was held on November 19th at 55th Yonge St Arcade. The Vice President occupied the chair.

A letter from Mr G. P. Pursey tendering his resignation as Treasurer, was read and after considerable discussion the following resolution moved by Mr Lumsden seconded by Mr Hull was carried. That the resignation of his office as Treasurer received from Mr G. P. Pursey be reported to the society with the facts and that the said resignation be recommended for acceptance. It was agreed that if Mr Pursey in the meantime withdrew his resignation no action would be taken. Confirmed
W. Howell Rec Secy

The regular fortnightly meeting of the Astronomical and Physical Society was held on December the 2nd at the residence of Mr Lumsden of 19 Ontario St.

The Vice President Mr Allins occupied the chair.

The minutes of the last meeting were read and with one or two corrections were confirmed.

Mr Wm Jb Seyler of Toronto and

Mr Jno W. Paterson M.S.D.

were duly elected active members of the Society.

A Communication was read from Sir Adam Wilson and a letter which appeared in "Knowledge and the reply was read.

Mr Lumsden reported that in reference to Mr Pursey's resignation the Council had met but as it was understood that the resignation had been withdrawn no action was taken.

Mr Miller gave some very interesting and valuable notes of observation of the group of spots which had passed across the Sun's disc Nov 21st to 30th ~~and~~ and showed an excellent drawing of the principal spot. Mr Allins gave notes of observation of the same group comparing and correlating with the Mr Miller's observation. Mr Lumsden reported observing a minimum of Algol very successfully.

A paper of great interest entitled The Identity of Light & Electricity by Hurly which appeared in the Popular Science Monthly was read by Mr Brewster and occasioned considerable discussion.

The meeting adjourned to Dec 16th /90 at the residence of Sir Adam Wilson

D. J. Howell Recording Secretary

Confirmed
A. Wilson

The fortnightly meeting of the Astronomical and Physical Society was held at the residence of Sir Adam Wilson, Shadma Crescent. On Tuesday Dec 16th 1890

The Vice President occupied the chair

The minutes of the last meeting were read and confirmed

Mr J. Alf. Livingstone of Toronto was proposed by Mr A Elvins and Mr Lindsay for active membership

Mr Arthur W. Murphy of Toronto was proposed by Mr Hiebner + Mr Howell for active membership

Mr J. B. Kedzie of Chicago Ill was proposed by Mr Elvins + Mr Miller for a corresponding member

Mr Miller reported observations on the Sun a group of spots were visible on the 14th + 15 were small but active

Mr Elvins has been watching the same group and confirmed what Mr Miller had reported

Attention was called to an article by Prof Langley in the American Journal of Science and Art in which the light of the the firefly and glow worms were exhaustively treated

Mr Paterson drew attention to recent spectroscopic work where by the rate of the earth in her orbit had been calculated. Considerable criticism and discussion was aroused. The chairman referred to a paper by Mr Parkhurst

in the "Federal Messenger" which would throw light on the subject.

Mr. Lindsay read a paper on "Astronomical Predictions" which he illustrated by some models and drawings. Methods were given that would enable a person ~~ignorant of~~ ^{who was not familiar with} the higher mathematics to ascertain with sufficient accuracy for practical observation, the position of the sun or moon at any given time.

It was received with appreciative attention.

The meeting adjourned until Dec. 30th at the residence of Mr. Howell 218 Bleeker St.

D. J. Howell

A. Chris.

Recording Secretary

After adjournment the society partook of an informal supper at the kind invitation of Mr. Sir Adam & Lady Wilson.

The regular meeting of the Astronomical and Physical Society was held on Tuesday Dec. 30th - 1890 at the residence of Mr Howell 218 Bleecker St.

The Vice President occupied the chair during the first part of the meeting ~~when~~ the President arrived the remainder

The minutes of the last meeting were read and confirmed

Mr. Alfred Livingston of Toronto

Mr. Arthur W. Morhby of Toronto

were duly elected active members of the society.

Mr. J. B. Kedzie of Chicago Ill.

was duly elected a corresponding member

Mr. Foster

was proposed by Mr Bell and Mr Elms as ^{an} ~~an~~ active membership

A communication from Dr Morrison of the Nautical Almanac Office Washington enclosing a paper on the Disappearances of Saturn's Rings and advising us of some books sent at the same time

There were also communications received from Sir Adam Wilson and from J. W. Crooner of Sudbury which was accompanied by two pamphlets.

The Corresponding Secretary was instructed to ~~reply to~~ on motion by Mr Muller ^{seconded} by Mr Elms to write conveying the thanks of the Society to Dr Morrison and to ask him if he would accept honorary membership.

The Corresponding Secretary was also instructed to state in replying to Mr Crothers communication that the society is unable to accept his proposals

It was moved by Mr Deane, seconded by Mr Ross that Mr Elvins with the two secretaries be a committee on publication to have the matter arranged for a second number of our publications and to submit the copy to the council. Carried

Attention was called to the last number of "Knowledge" it having some very fine reproductions of Beniar photographs.

It was announced that the next meeting would be held at the residence of Mrs Elvins 11 St Vincent St on Jan'y 15th 1891.

The paper of the evening was then read. It being an original contribution to the Society by Jos Morrison M.A., M.D. Ph.D.; F.R.S. of the Nautical Almanac office Washington and entitled The Disappearances of Saturn's Rings. Mr Lindsay had prepared diagrams from the authors drawings and in his reading of the paper used these large diagrams and formulae to advantage showing the calculations which gives the time of disappearance

The first disappearance is computed to take place Sept 22nd and the second October 30th 1891. The first paper on the "mar Orbit" was read by Mr

Phillips and occasioned some discussion which was not finished when the meeting adjourned

W. J. Howell

Recording Secretary

Confirmed
A. Elvins

A meeting of the Council of the Astronomical and Physical Society was held at the residence of Mr Elvins 11 St Vincent St at 19.30. o'clock Jan'y 13th 1891

The Vice President in the chair

The resignation of Mr G. G. Pursey as Treasurer was considered. Mr Pursey had not withdrawn it as was understood

It was decided to recommend the acceptance of said resignation and that a successor be elected.

It was also decided to recommend that the new Treasurer be authorised to secure a suitable book and that he be requested to open an account with each member of the society. The council then rose -

W. J. Howell Recording Secretary

MINUTE OF COUNCIL.

-eee-

A meeting of Council was held at 19.30 o'clock this evening to take into consideration the resignation, tendered on the 18th of November, by Mr. G. G. Pursey as Treasurer of this Society. Owing to Mr. Pursey's subsequent illness and to the hope that he might be induced to withdraw it, his resignation remained in abeyance until he could be consulted on the subject, but, as he has declined to act, Council regrets that it has no alternative but to recommend that said resignation be accepted and that a successor to Mr. Pursey be elected.

Council further recommends that the new Treasurer be authorized to procure a suitable book and that he be requested to open an account with each member of the Society.

All of which is respectfully submitted.

H. P. Howell

Recording Secretary.

Toronto, 13th January, 1891.

D E C L A R A T I O N.

WE the undersigned CHARLES CARPMAEL, M.A., F.R.A.S., ANDREW ELYIUS,
GEORGE G. PURSKY, GEORGE E. LUMSDEN, DAVID J.
ROVELL, and ALLAN F. 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 car-

WE the undersigned CHARLES CARPMAEL, M.A., F.R.A.S., ANDREW ELVINS,
GEORGE G. PURSNEY, GEORGE B. LUMSDEN, DAVID J.
ROBELL, and ALLAN F. 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.
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 - (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.

President.

Vice-President.

Treasurer.

Corresponding Secretary.

Recording Secretary.

Librarian.

ON the _____ of March, A.D., 1896, before me personally appeared the said Charles Carpmael, Andrew Elvins, George S. Pursey, George F. Lawnden, David J. Howell and Allan F. 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 men-

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Notary Public.

Draft of
Constitution of the
Cathedral of the
Bishop of Toronto

Mr. H. H. H.
How this may apply to do with
Constitution of the Bishop of Toronto
B. S. S.

Circular.

THE ASTRONOMICAL AND PHYSICAL SOCIETY OF TORONTO.

---x---

Chales Carpmael Esq., M.A., F.R.A.S.,

Director Toronto Observatory, President.

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The Astronomical and Physical Society of Toronto was formed some years ago by a few gentlemen who had been accustomed to meet together to read papers upon scientific subjects. As its objects became known, its membership increased and, recently, with a view to placing it upon a more permanent basis, its promoters secured incorporation under a general Act which enables it to acquire and hold real and personal property, to receive donations, gifts, bequests, etc., and to act as a corporate body. Under very similar auspices, several world-renowned astronomical societies from small beginnings, advanced to a position in which they were able to render to Science services of a brilliant and enduring character.

This Society desires to promote and encourage the study of astronomy and physics in Canada. For that purpose, it proposes to acquire a valuable reference-library and suitable apparatus and instruments. Its printed Transactions will contain such Papers and Notes as shall have been approved for general circulation, and will be exchanged with a large number of Observatories and Scientific Societies. Correspondence will be conducted with distinguished professional and amateur astronomers who will be invited to contribute articles to be read to the Society and to be included in its publications.

The Society desires to be popular in the best sense of the word and, therefore, cordially invites to membership any one

Draft of Charter
Astronomical Physical
Society of Toronto

who takes a sincere interest in astronomical and physical matters,
be his or her scientific qualifications what they may. It is con-
sidered that through the medium of its meetings and publications, an
ample return will be made to its members. Fortnightly meetings are
held. Papers, original or selected, are read and discussed. Condi-
tion for admission may be proposed at any meeting. Fees \$5
annum. For a copy of the Constitution of the Society and an
information, address Mr. D. J. Howell, the Recording Secretary,
218 Bleecker Street, Toronto.

who takes a sincere interest in astronomical and physical matters, be his or her scientific qualifications what they may. It is confident that through the medium of its meetings and publications, an ample return will be made to its members. Fortnightly meetings are held. Papers, original or selected, are read and discussed. Candidates for admission may be proposed at any meeting. Fees \$2 per annum. For a copy of the Constitution of the Society and any other information, address Mr. D. J. Howell, the Recording Secretary, at No. 218 Bleeker Street, Toronto.

X

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Leave 2 inches space at top of 1st Page. Set in L.P.
~~THE ASTRONOMICAL AND PHYSICAL SOCIETY OF TORONTO.~~

~~Constitution~~

Constitution and By-laws.

Article I---Name and Objects

1. The name of this Society shall be The Astronomical and Physical Society of Toronto.

2. The objects of this Society shall be:--

(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 this 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.

Article II---Membership.

1. This Society shall consist and be composed of Active, Life, Corresponding and Honourary Members.

2. Active members shall consist of persons who have been elected to membership and have paid their dues. The persons who shall make the Declaration for the incorporation of this Society under the provisions of the Revised Statute of Ontario Chapter 172, are hereby

declared

declared to be active members thereof, duly elected, and shall become fully qualified as such upon payment of their dues.

3. Life members shall consist of persons who have been elected to Life Membership and have paid the sum of twenty dollars to the Treasurer of this Society.

4. Corresponding members shall consist of persons not residing in the City of Toronto, who shall have been elected by the Society, as such.

5. Honourary members shall consist of persons distinguished for their attainments in Astronomy and Physics who shall have been elected to Honourary Membership. The Honourary Members of this Society shall, however, at no time exceed ten in number.

6. Active members shall pay an annual fee of two dollars.

7. No member in arrears shall be entitled to vote at any meeting of this Society.

8. Corresponding and honourary members shall pay no dues and shall have no votes.

9. Candidates for membership in this Society may be proposed at any meeting by a mover and seconder in good standing and may be voted for at any subsequent regular meeting. The vote shall be by ballot and an assenting majority of the members present shall be required for an election. Each candidate shall on his election pay into the Treasury of this Society the sum of two dollars which shall be in lieu of his annual fee until the next first day of March following his election, and no accepted candidate shall be deemed to be an active member of this Society until he shall have duly paid in such sum.

10. An active member may at any time commute his dues and by the payment of twenty dollars and upon the vote of this Society may become a Life Member thereof.

11. Any member desirous of resigning his membership in or of withdrawing from this Society shall give to the Recording Secretary due notice thereof and shall pay all arrears, if any, whereupon his membership shall cease.

12. If at any time the harmony, well-being and best interests of this Society appear to require that any one or more of its members shall cease to be a member or members, the President, or other presiding officer, shall call a special meeting of the Society for the purpose of considering the matter and shall cause due notice thereof to be given such member or members, and if, upon due examination, the charge or charges shall appear to have been sustained, he shall thereupon invite such member or members to resign forthwith, and in default of such resignation the Society shall expel such member or members.

13. Any member who shall resign, withdraw or be expelled from this Society shall thereupon forfeit all interest in or claim to the property and funds of the Society.

Article III---Officers.

1. The officers of this Society shall consist of a President, a Vice-President, a Treasurer, a Corresponding Secretary, a Recording Secretary and a Librarian. These officers shall form the Council of this Society to which shall be committed the general management of its affairs. Three members of the Council shall form a quorum.

2. The President, or in his absence, the Vice-President, or in the absence of both, any member of this Society appointed for the purpose, shall preside over its meetings. It shall be the duty of the presiding officer for the time being to preserve order, regulate the proceedings of the meetings and to exercise a general supervision over the interests of the Society.

3. The Treasurer shall receive and, from time to time, account for

all the moneys and such papers of the Society as shall have been committed to his custody, and, if required, shall give such security as to the Society shall seem proper.

4. The Corresponding Secretary shall conduct the official correspondence of the Society and shall keep copies of all letters written by him and shall preserve and index all communications received and shall read such communications to the Society at the first regular meeting after such receipt.

5. The Recording Secretary shall keep the Minutes of the Society and shall have the custody of its records generally. It shall be his duty to notify members of the times and places for holding the regular meetings of the Society and, when required, by the presiding officer to do so, to call special meetings of the Society or of the Council, or both.

6. The Librarian shall have charge of and be responsible for the safe-keeping and proper condition of the books, publications and apparatus of the Society and shall report to each regular meeting the names and number of such donations and publications as may have been received.

7. The Society may appoint such other officers as may appear to be required and may specify their duties, and may vary the duties of the officers composing the Council.

8. The presiding officer of this Society for the time being may appoint Special Committees to report to the Society upon any subject upon which it desires information or advice not within the province of the Council to procure.

9. The officers of this Society shall be chosen at its annual meetings which shall be held on the last Tuesday in the Month of February of each year, at the hour of eight o'clock P.M., at a place

of which due notice shall be given. Nominations shall be in writing and voting shall be by ballot. In the event of vacancies occurring during the year, the same may be filled at any regular meeting of the Society, the nominations and voting to be in due form.

Article IV---Papers.

1. The title of any Paper, Memoir, or other production by a member, intended to be read at a meeting of this Society, shall be submitted together with an abstract of its contents, to the Council, through the Recording Secretary, previous to the meeting at which it is to be read. The Paper if approved and read, shall be submitted to a committee, and on report of said committee, may be recommended to the Council for publication, either entire or in abstract in the Transactions of the Society.

Article V---Liabilities.

1. No liability or obligation whatever, on the part of this Society, shall be incurred, and no contract shall be entered into, or expenditure made unless and until such liability, obligation, contract, or expenditure has been recommended in writing by the Council and afterward approved by the Society at a regular meeting held after reasonable notice has been given to each member of the intention to submit at such meeting the subject of the approval of such liability, obligation, contract, or expenditure; this provision shall not apply, however, either to the incurring or the payment of any petty incidental expenditure which shall have been recommended by the Council.

Article VI---Powers of Revision.

1. The Constitution and By-laws of this Society may upon the recommendation of the Council, be amended by two-thirds of the members at any regular meeting of which due notice has been given together
with

6.

with notice of the intention to submit thereto the expediency of making such amendment.

The above Constitution and By-laws were unanimously adopted by The Astronomical and Physical Society of Toronto at the annual meeting held on Tuesday the 25th of February, 1890.

one proof

Mr Lumsden

Asst - Secretary
Parliament
Provincial Bdgs.

One to

Mr Howell

Ramsay & Co
