

Meeting of the Toronto Astronomical Society held at the Canadian Institute Tuesday Evening, Jan. 13th, 1903. Second Vice-Pres. Mr. W.B. Musson, in the chair.

Minutes of former meeting read and confirmed.

The Secretary presented a report of communications received and acknowledged during the past year.

Mr. Lumsden reported communications from Dr. Lewis Smith and Prof. Pickering.

A special meeting of Council was called to take place after the adjournment of this meeting.

Under observations and predictions, Mr. Lumsden asked members to observe the difference in the apparent size of the Moon in apogee and perigee.

The augmentation of the Moon's diameter led to an interesting discussion in which Mr. Miller, Mr. Patterson, Mr. Lumsden, and others, took part.

Mr. Elvins placed a diagram on the board showing the "morning and evening Stars" at present. Venus, Mercury, Neptune, Jupiter appearing as evening Stars, while Uranus and Mars are morning objects.

Mr. Lumsden drew attention to a minimum of Algol on the 17th inst.

Mr. Musson stated that the Scientific American was authority for a statement that (A) Orionus is brighter than last year. This led to a discussion as to whether this Star is a variable or not.

Mr. Miller also handed in the following note of some Double Star measurements, promised to the Society some time since.---

56 Ceti

" This Star is one which I have often observed, as it is very close to Mira, (c) Ceti. We have in the catalogues a great many measures, dating back as far as 1783. I append a few of these, to which I affix my own last measures (a mean of 7) made 1903, Jan. 1st."

Year	Angle	Distance	Observer.
1783	235	16".9	H.
1853	230	15".09	
1873	230.4	16"	Ws.
1877.8	231	15".6	Fl.
1903.0	227	16".9	Miller.

A. Piscum.

" A long series of measures since 1781 give the distance from 5" to 3".08. My measure on 1903, Jan. 1st, gives the distance as 4". The system is believed to be in revolution, but there must be in that case a dark or invisible body associated with the visible Stars to account for the evident perturbations."

The paper of the evening was read by Mr. Plaskett of Toronto University on the subject of "Orthochromatic Photography". After a short review of the science of the subject, Mr. Plaskett threw on the screen a number of Photographic slides showing the superiority of orthochromatic plates in reproducing ^{the} relative tones of color in black and white.

A vote of thanks to Mr. Plaskett was moved by Mr. Patterson seconded by Mr. Lumsden, and supported by Mr. Maybee, who as an old amateur photographer could testify to the excellence of the slides Mr. Plaskett had shown.

Calhoun

V PRESIDENT.

W. E. ...

RECORDER.

Open Meeting of the Toronto Astronomical Society held in the Library of the Canadian Institute, Tuesday Evening, Jan. 20th, 1903. The First-Vice President, Mr. C.A. Chan, in the chair.

This being the annual Conversazione of the Society, no business was transacted beyond the reading of the minutes.

Mr. Miller handed in the following note re the variability of (A.) Orionis referred to by the 2nd Vice-President at a former meeting. "The variability of (A.) Orionis" was discussed by Sir. J. Herschel in 1836. He saw it sometimes brighter than Rigel, sometimes fainter than Aldebaran. In 1852 Fletcher saw it brighter than Capella and wrote of it in 1880- "Best fort superior $\alpha^*(a)$ "-, which agrees with my own opinion of its brightness then and in following years. However, I have generally seen it brighter than Aldebaran. It is now (Jan. 1903) much brighter than Aldebaran, brighter than Rigel, and probably brighter than Procyon. Flammarian (les Etoiles) says -"mais il me semble qu'il n'y a pas de period du tout".

Mr. Stupart chose for the subject of his presidential address "Developments in Cosmial Physics".

Mr. Stupart noted the increasing interest being taken in solar physics and other branches of research. He gave an account of the establishment of the Toronto Observatory, and the causes leading thereto. The British Astronomical Society was formed in 1834, and a magnetic survey was decided upon in the same year. Reports were presented in 1835 and 1837, and the first naval expedition was decided upon in 1838. The survey made both meteorological and magnetic studies. Several points for observatories were chosen. Canada and Van Diemen's Land were selected because of their proximity to the magnetic poles. St. Helena was chosen because it was near to the centre of least magnetic disturbances, and the Cape of Good Hope was chosen because it exhibited the secular changes in magnetic disturbances to good advantage. In Canada, Toronto was chosen as the most convenient and advantageous locality. King's College granted a site, and the instruments were set up in a log house in 1840, and since then daily observations had been made. In 1892 the introduction of the trolley car ruined the observatory, and the instruments were removed to Agincourt. The first meteorological weather forecast prepared at Toronto was made by Prof. Kingston in 1876. There are now five fully equipped observatories in Canada, besides a number less fully equipped.

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At the

Among the visitors present at the meeting were Mayor Urquhart, Mr. Jenkins, late of Cardiff, Wales, and for a number of years Vice-President of the Welsh Astronomical Society, and Dr. Marsh, President of the Hamilton Astronomical Society. These gentlemen, at the call of the meeting, spoke a few words, expressing their pleasure at being present and their appreciation of the President's address.

Mr. Haney, referring to the paper, took occasion to criticize the suggestion of Schuster's referred to, ^{viz.} that observations might profitably cease for a time, and some use made of data already furnished. Mr. Elvins thought that this did not represent accurately Mr. Schuster's view, ^{though his note was misleading} of whose suggestion he thought most favorably. Dr. Chant also concurred in Mr. Elvin's representation of Mr. Schuster's view.

John Elvins
Records

Vice-President,

In the absence of Mr.Lumsden, Miss E.A.Dent read the following letters :

1. From the Astronomer Royal, intimating that a second copy of the Greenwich Observations for 1897 has been transmitted, as requested.
2. From M.Camille Flammarion, stating that he had handed to M.DeLandres Mr.Harvey's request that he transmit to the Society a statement of his claim that he was the discoverer of the emission in solar radiations of negatively charged particles.
3. From Mr.T.S.H.Shearmen, of Woodstock, disputing the claim of Mr.Arthur Harvey as the first to detect the sun's influence on the magnetism of planets and comets.
4. From Dr.J.Morrison, of Washington, with respect to the striking of his name from the Rolls of the Society as an Honourary Fellow.
5. From Professor Lewis Swift, of Marathon, N.Y., acknowledging receipt of a copy of the last Report of the Society, and offering to present to the Society a new astronomical atlas with several maps of all the constellations.
6. From W.D.Barbour, Esquire, Honourary Secretary of the Leeds Astronomical Society, with reference to this Society's last publication.
7. From Mr.A.D.DeCelles, Librarian of Parliament, Ottawa, relative to further numbers of the Lunar Plates published by the Paris Observatory.
8. From the Reverend Father J.Garix, S.J., St.David's College, North Wales, relative to his work as an amateur astronomer in Montreal.

Regular Meeting of the Toronto Astronomical Society held at the Canadian Institute, Tuesday evening, Feb. 3rd, 1903. Vice-Pres. Dr. J.A. Chant, in the chair.

Minutes of former meeting read and confirmed.

A letter was received from Dr. Marsh, of Hamilton, relative to Comet "A" 1903. Owing to haze in western sky, he had been unable to locate it at time of writing.

The Secretary reported having had the pleasure of being present at a meeting of the Hamilton Astronomical Society on Jan. 23. He also complimented Dr. Marsh on the performance of his 5" Brashear telescope and excellence of its mounting, -the latter being entirely the work of his own hands.

The attention of the members was also drawn to a series of popular astronomical articles now appearing in the columns of the Saturday "Telegram".

It was moved by Mr. Maybee and seconded by Mr. Haney that Mr. Lunsden be requested to attend to the matter of procuring "Swift Atlas" and the "Proceedings of the Royal Society" at the expense of the Society-(carried).

The librarian was authorized to purchase Clerks' "Problems in Astrophysics", and Maunder's "Astronomy without a Telescope".

The librarian was also authorized to renew subscription for periodicals now due.

George Perry Jenkins, ^{A.R.A.S.} of Hamilton, was proposed as an Associate by Dr. Marsh, seconded by Rev. Mr. Salter.

Mr. Miller handed in the following note re (A) Orionis.-

Note re Alpha Orionis. Feb. 3 1903

Mr. Miller stated that during the past four weeks he has observed this star on every possible occasion with the object of comparing its brightness with that of stars in the same region of the heavens. His conclusion is that it very slightly exceeds Rigel in brightness, and is somewhat brighter than Procyon. The fact that its ^{meridian} altitude is nearly 20 degrees greater than that of β Orionis may in measure account for the slight inferiority of the light of the latter: he has, however, compared Betelgeuse and Rigel when Orion was far east of the meridian and when these stars did not greatly differ in altitude, with the same result. The very great difference between the colours of the ~~XXXXXX~~ stars named makes the comparison of their relative brightness rather difficult: Thus to most people Rigel seems intrinsically brighter than its fiery neighbour, yet the latter has a "large" look, which strikes ~~even~~ persons unaccustomed to star observations. In his opinion α Orionis is below Capella in light: here again, however, there is a great difference in the altitudes of the two objects. Betelgeuse though so ruddy to the eye, and even in the telescope, he finds by actual comparison to be really less red than a gas-flame, a remark which will probably hold good for most of the so-called "red stars." Its tint is, however, much deeper than that of Capella, which is barely yellowish.

at present.

The spectrum of α Orionis ^{at present} does not seem very different from that often observed by the speaker in former years. There is a series of broad dark bands and also an immense number of fine dark lines: The red and orange portion of the spectrum is very intense, and the strong dark bands are very suggestive of the absorption bands of the solar spectrum during a certain class of electric storms when the sunlight has a peculiar yellow tint. ^A ~~A~~ band in the orange-yellow in the vicinity of the "D" lines is very like what is commonly called "the rain-band."

Having very carefully examined the spectrum for bright lines, the speaker does not think that any such are present. It is very difficult to detect such lines with so small an aperture as ^{the} a four-inch objective which he uses, and to make sure he has adopted the following expedient: the spectrum is observed with a slit-spectroscope, ~~the~~ the slit being placed parallel to the diurnal motion, and no cylindrical lens employed. Seen in this way ^a ~~the~~ star's spectrum is a very fine narrow brilliant line of light, and if bright lines be present they appear as bright ^{knots} ~~spots~~ or spots superposed upon the ~~linear~~ linear spectrum, and are thus much more evident than when a spectrum-ocular is employed and the faint star-spectrum widened out by a cylindrical lens. In the case of Alpha Crionis no bright lines were visible by this or any other method; the speaker's conclusion is, therefore, that the star during the present maximum anyway, does not show bright lines.

A. F. Miller

SECRETARY

TO GENERAL

Mr. Harvey, referring to Langley's article in *Science* on "Artificial Atmospheric Disturbance", thought it might open a future for good telescopic work in low land. Mr. Harvey also handed in the following note:-

~~When~~, having finished making a ^{manuscript} of part of the declination tables kept at the Toronto Observatory, for the use of Prof. A. Wolfer, of the Astronomical Observatory, Zurich, Switzerland, (kindly permitted by Mr. R. F. Stupart), he had made a table of the differences in declination at 8 a.m. and 2 p.m. (eight hours and fourteen hours) for the years between 1845 and the present date. The mean of each month's reading for those particular hours was taken and the average of these monthly readings was considered as the mean for each Calendar year. From this table he had drawn a curve, for comparisons with the curve of Sun-spot activity derived from Wolf and Wolfer's relative Sun-spot numbers. The concordance was remarkable and the diagram was shown in exemplification.

He stated that this curve was probably made on very similar principles to those adopted by Prof. Ellis of Greenwich Observatory, whose comparative curves were well known. The differences in each year were used as the ordinates of the curve, but this was the first long-series curve made from American data, for there was no other magnetic observatory on this side of the Atlantic which had anything like so lengthened a period of careful observations, and it was interesting on that account.

Also a "query" from Mr. Harvey especially addressed to Mr. Miller, - whether he had noticed when observing Solar prominences (of which the tips were usually represented in the "Memorie" as curved) which way the curvature was inclined, upon the average; either towards or from the equator, and if such curvature was different in any respect in different latitudes. Mr. Miller, in reply, said he had not noticed the point in question, though the protuberances did bend or branch out, sometimes almost like trees, on reaching their full height.

Page 12. Dr. Harvey's note on the Society on "Artificial Atmospheric Disturbance"

Regular Meeting of the Toronto Astronomical Society held at the Canadian Institute, Tuesday evening, Feb. 17th, 1903, the President, Mr. R.F. Stupart in the chair.

Mr. George Perry Junkins, F.R.A.S. of Hamilton was duly elected an Associate.

Mr. P. Cameron, D.C.L. was nominated for Membership by Mr. A.T. de Lury, seconded by Mr. R.F. Stupart.

Mr. Pursey reported some Ephemeral spots on the Sun and promise of Sun activity.

Mr. Weatherbee reported Faculae on the Western limb on 28th, 29th and 30th of Jan. 7th.

Mr. Elvins stated that he had ^{seen} the Zodiacal light on his way to the meeting.

The Secretary reported the following communications:-

From Prof. Hale, Yerkes Observatory, relative to a question asked by Mr. Haney as to whether solar prominences curved or tend to curve towards the Solar Equator. Prof. Hale says that photographs of solar prominences, so far as he has examined them, afford little evidence regarding the question raised.

also from---

W. H. S. Monck, F.R.A.S. in regard to list of aerolites previously forwarded the Society.

G. A. F. Raland, a retired officer of the Royal Dutch Navy, residing at Battleford, N.W.T. describing the fall of an aerolite observed at that place on Dec. 7th last.

The Librarian of the University of Toronto, requesting copies of Societies Transactions for '97 and '99.

Dr. Wadsworth, of Simcoe, thanking the Society for copies of ephemeris of Comet "A" 1903. He had been unable to locate the Comet owing to haze. Dr. Wadsworth had taken a photo of Comet "B", 1902 a print of which it was promised would be forwarded; a water color painting of the "Straight wall" region of the lunar surface, by Miss Minnie Holstead, of Simcoe, from views obtained with the aid of Dr. Wadsworth's 12" reflector. *was presented to the Society*

Mr. A. F. Miller addressed the Meeting on "Stellar Motions".

Stellar Motions; (A. F. Miller, Feb 17 1903)

Mr. Miller referred to the great secular changes in the aspect of the starry heavens resulting from the action of Precession during the immense period ⁱⁿ which this ~~diurnal~~ revolution ^{is accomplished.} He drew attention to the fact that the path of the pole among the stars is not a circle or any other closed figure, but the motion is cycloidal in consequence of the drift of the solar system. He briefly defined Nutation as a thwartwise revolution of the pole which grafts itself on to the great precessional curve as a series of small sinusoids, the oscillations having a period of about $18\frac{1}{2}$ years.

He went at length into the theory of the aberration of light, which he traced from its discovery by Bradley; giving a description and figure of the small instrument used by that astronomer in his investigation of this phenomenon. In the opinion of the speaker Bradley's discovery was probably the most important ever effected by the aid of the telescope, since by the knowledge of aberration we obtain, (1) a most important correction for star-positions; (2) the first positive and visible demonstration of the earth's annual motion in its orbit; (3) the most exact method of determining the sun's distance - a unit of the highest importance in astronomical research.

Dealing with the physical aspect of aberration, he showed that the distance (in radii of the earth's orbit), from which the radius would subtend an angle equal to

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Dealing with the physical aspect of aberration, he showed that the distance (in radii of the earth's orbit), from which that radius would subtend an angle equal to the "Constant of Aberration", is almost exactly the ratio between the velocity of light and that of the earth in its orbit. Finally he explained the physical method by which we may compute the sun's distance when the velocity of light and the Constant of aberration are accurately known. Working out

over) out

the formulae by the aid of the most
recent determinations of these
quantities, he showed that we
arrive at 92,975,500 miles ^{as} the
sun's mean distance, and $8''.743$
as his equatorial horizontal parallax—
figures in almost exact agreement
with the results obtained by the
geometrical and gravitation methods
employed by astronomers to determine
these important quantities.

Note. (Pray read among "Notes & Queries")
of 9 am abstract. A.H.

The Society, having examined with interest, a year ago, a stereoscopic view of the moon, brought to its meeting by Mr C. E. Cumbelee, will be in a position to appreciate some remarks made to the French Academy by Col. Raussedat, and to be seen in No. 1 of the Comptes Rendus for this year, 1903.

After exhibiting ~~some~~ a stereoscopic view of the moon, in the same phase for both the photographs, but having changed between them to some extent, owing to librations, he remarked that the base line, some 30,000 kilometers, or nearly 20,000 miles, was quite enough to give the impression of solidity to an object 240,000 miles away. A Dr Pulfrich, of Jena, had made a stereo-comparer, on the same principle as that invented by Mr E. Deville, our Surveyor General for the Dominion, and used here for drawing contours of equal elevation on photographic views from mountains. Applied to ^{lunar} photographs by Messrs Dewey and Poiroux, the Dr had been able to draw contours of equal elevation with respect to the lunar surface. These contours were shown.

Col Raussedat next laid before the Academy two views of Saturn, taken by Prof Wolf of Heidelberg, on the 9th and 10th of June, 1899. There the planet stood out, with two satellites, as if plainly detached from and in front of its background of stars. Dr Pulfrich had detected on these plates, a very small planet which had escaped Prof Wolf's observation, though he only used microscopes magnifying four or five times.

The planet was between the 12 - 13th star magnitude, as to brightness, and also stood out in front of the picture. The base line in this case was the distance the earth had moved in its orbit and was not less than 2,500,000 kilometers, or 1,500,000 miles.

Dr Pulfrich expected to employ

stereoscopy, and to use his stereo-com-
parative instrument, in determining
the parallax of the nearest stars,
the base line being the diameter of the
Earth's orbit, or 185,000,000 miles.
For this purpose he would also use
(or others would do so) the base
line afforded every few years, or
even every century, by the motion
of the Sun in space. Stars with
the same parallax would seem to
be (as they really were) at equal
distances; those with the greatest
parallax would appear the nearest.
The ^{pair of} views would have to be taken
by the same objective or with two
of equal focal length, and in the
same plane, that is, the plane ~~of~~
in which lies the straight line
connecting the two stations.

For the Astronomical Socy.

Presented by Gen. Arthur Haysney
Feb. 17 - 1908.

The regular meeting of this society was held in the Canadian Institute on Mar 3rd. The President, Mr R. F. Stupart F.R.S.C. 19 in the chair.

The President announced that the petition to his Majesty the King praying that this Society be granted the privilege of using the prefix "Royal" to its name had been graciously ~~been~~ ~~assented~~ ~~to~~ acceded to and that the Society will now be known as the Royal Astronomical Society of Canada.

Official letters conveying this information were read, from the Hon R. W. Scott Secretary of State and Joseph Pope Under Secretary of State Ottawa also the necessary legal confirmation of the same by his Lordship Chief Justice Meredith.

Communications were reported from W. H. S. Monck and Lewis Swift.

Mr V. Cameron M.B. was elected an associate. S. D. Kwan 148 Avenue Rd and A. D. Laurent 158 York St were proposed as associates by Mr Elvins seconded by Mr Musson and Mrs W. C. Eddis ^{23 Charles St} proposed by.

The rules were suspended and on motion of G. E. Sumner seconded by A. F. Miller Lewis Swift F.R.S.C. &c was elected a "Corresponding Fellow" of the Society. Lewis Swift thus has the honor of being the first Corresponding Fellow elected by the Royal Astronomical Society of Canada.

In view of eminent services rendered the Society and Scientific attainments Joseph Pope C.M.G. F.R.S.C. Under Secretary of State Ottawa was nominated as a Fellow of this Society - by G. E. Sumner seconded by ~~John A. Patterson~~ ^{John A. Patterson} the name is now posted in the library and awaits further action.

Mr Elvins ~~motion~~ made a motion referring back to Council the matter of printing a report of ^{last year of} fifty pages for last year recommended by the previous Council meeting.

The Librarian reported the receipt of the final number of the Paris lunar photographs.

March 6th 1903

Council meeting held Residence of Mr J. Robert
86 St. Albans

Moved by W. B. Munson
Seconded by Tom J. Miller
That the ^{publication of the} Annual Transactions of
the Society be omitted for the
year 1903, and in lieu thereof
that periodical bulletins may be
issued if deemed advisable
by the Council of the Society
Carried R. P. Support
Post

Moved by Mr Harvey Seconded by Mr Miller
~~That the text of a summary of the~~
~~of the year~~

- | | |
|--------------------|---|
| Mr. Harvey | |
| Mr. Woodworth | x |
| Mr. Leary | x |
| Mr. Chant | x |
| Mr. J. J. Saunders | x |
| Mr. Miller | x |
| Mr. Munson | x |
| Mr. Collins | x |
| Mr. Maybee | x |
| Mr. Adams | x |

Mr. Miller & Mr. Munson
& the Post be a
Committee to nominate
Fellows of the R.A.S.C.
Carried
R.P.S.

Report from Council

a meeting of Council was held at the residence of Mr George Redout 26 St Albans St on Mar 6/03

The President in the chair
after discussion it was moved by Mr Musson seconded by Mr Muller that the publication of the Annual Transactions of the Society be omitted for the year 1902 and in lieu thereof that periodical bulletins may be issued if deemed advisable by the Council of the Society

Carried

Mr Muller, Mr Musson and the President were appointed a committee to nominate candidates for "fellows" of the R.A.S.C.

Carried *Carried by E. Edwards
Chair & House*

Proposed plans for a building for the Society were discussed and ~~referred~~ referred to the committee appointed at a previous meeting - The President Mr Muller Mr Sumner and Mr Redout, for further consideration

The question of a suitable device for an official seal was discussed and the members were asked to bring designs of same to be presented at the Meeting of Apr 17/03

Moved by Mr Arthur Harvey
seconded by E. Edwards
Bulletins to not be

*W. Allen
Secretary*

March 3 / 1903

Mr. Miller reported that he has continued his observations of *a* Orionis. On several occasions since the last meeting he has seen this star as bright as Capella, and once it appeared brighter. On account of its unusual brilliance he has been able to observe its spectrum with comparative ease: It is the finest spectrum of this peculiar type (Secchi's 3rd type), that it has been his fortune to see. Its peculiarity is, that in addition to a great number of fine dark lines there is a system of very strong dark bands with their sharp edges turned towards the violet. The red, orange and yellow regions of the spectrum are distinguished by a vivid intensity which is very striking, while at the same time the spectrum is prolonged far into the violet. There are very striking dark bands in the red, orange and blue. The yellow, by its proximity to the dark band near "D", and from the fact that there are no strong lines there, seems almost like a bright band; the same is true of a small region in the blue-green: However the observer is of opinion that the spectrum shows no real bright-lines at present.

Regarding β Orionis, he said that having re-observed the distance and position angle of this well-known pair he has obtained the following result:

Epoch 1903.15 . Distance 10", Position angle 199°

He drew attention to the fact that the distance and angle ^{remain} practically unchanged since the pair ^{was} first measured. He also stated on the authority of Flammarion that β Orionis is a star without any parallax and having no sensible proper motion. Everything in fact points to ~~its~~ its inconceivably vast distance from our system and consequently its enormous dimensions and brightness as a stellar body.

Mr A. F. Miller referring to his observations of α Orionis in which he had noted ~~its~~ gradual increase in brightness, expressed the opinion that this star is now brighter than it has been for fifty years being now comparable in brilliancy to Capella.

Mr F. S. Blake ~~had~~ reported his observations of a group of small sunspots on account of illness. Mr H. B. Marsh of Hamilton was unable to present his paper dealing with the planet Neptune and in lieu of it - Mr F. S. Blake contributed a paper dealing with the nature of comets and the methods employed to determine their positions when within the solar system.

Mr Chant read a short contribution from Prof Hull of Dartmouth College - explanatory of his recently devised apparatus for demonstrating the effect of the pressure of light - on very small material particles of ~~small~~ ^{small} ~~light~~ density, within a vacuum tube exhibiting the phenomena of comets tails when ~~strong~~ light was concentrated ~~thereon~~ ^{thereon}.
The President announced ^{the paper for the next meeting would be by} that Mr John A. Paterson ~~will~~ ^{read} on "The Astronomy of Newton".

In Remembrance
W. Colburn

Meeting Mar 17/03

ROYAL ASTRONOMICAL SOCIETY
OF CANADA.

The regular meeting of the Royal Astronomical Society of Canada was held in the Canadian Institute on Mar 17th the second, the President W. B. Emerson in the chair.

In reference to the report from Council referring to a possible publication of a Bulletin, Mr. Harvey moved seconded by Mr. Sumner, that a bulletin be not published without the consent of the society - carried - with this amendment, the report from Council was adopted.

Communications were reported from J. H. Keesee of Chicago. The Eastern Bureau of Statistics N. York and from the Hon. Secretary of the Royal Society of Canada - the latter requested the appointment of delegates by this Society to attend the annual meeting to be held in Ottawa in May next - this was left over for future consideration.

Joseph Pope Esq. G. F. R. S. C. Under Secretary of State Ottawa was elected a Life Fellow and B. D. Kiran Mrs W. E. Eddis and Mr A. D. Lawrence of Toronto were elected Associates.

Nominations for Associates

James F. Whitson 588 Markham St } G. E. Sumner
Mrs H. E. Paulson Stratford Ont } and Mr. Bygel
G. A. F. Rayland Battleford N.W.T. } R. F. Stewart
} and J. Collins

Various designs of seals were posted. In the library and the question of the adoption of a suitable device left over to a future meeting.

Mr. Miller drew the attention of the members to some interesting features now noticeable on the surface of the planet Mars.

The paper for the evening entitled "The Astronomy of Milton" was then read by John A. Paterson.

M. A. H. C.
The paper for the next meeting was announced as "The Historic Seal" by George Anderson M. A.

J. Collins

Meeting Mar 31/03

ROYAL ASTRONOMICAL SOCIETY
OF CANADA.

The regular meeting of the Royal Astronomical Society of Canada was held in the Physical Lecture Room of L'Assomption University on the evening of Mar 31st first vice President C. A. Chant M. A., Ph. D. in the chair.

The reading of minutes of the previous meeting was dispensed with.

James F. Whitson 588 Markham St Toronto
Mrs H. E. Pantoy ~~Stratford Ont~~
G. S. Rayland Battleford N.W.T.
were elected associates of the Society

Mr George R. Anderson M.A. of the department of Physics of L'Assomption University then gave a lecture on "The Diatomic Molecule"

Communications

From Dr Lewis Swift
Hans ~~Ray~~ ~~Be~~ ~~u~~ - Short paper Algal companion
" " " " nova hypernova

For Reader
M. Collins

ROYAL ASTRONOMICAL SOCIETY
OF CANADA.

Apr 14/03

The regular meeting of the Royal
Astronomical ~~Astronomical~~ Society of
Canada was held in the Canadian
Institute on April 14th 2nd Vice
President W. B. Munnson in the Chair
a communication was reported from
Prof Linn of the Societat astronomica
de Mexico
The Librarian reported receipt of some
~~publications~~
The Librarian read a paper
entitled "The Moon a dead
World" considerable discussion
followed the reading of the paper

In Records
W. B. Munnson

W. B. Munnson

Royal Astronomical Society of Canada
Stellar Motions: (III) 1903, April 28 in Canadian Institute

A. F.
Mr. Miller called attention to the fact that in his two former addresses on this subject he had dealt with the apparent motions, i. e., Precession, nutation, aberration etc., but now proposes to treat of the proper motions, and defined the proper motion of a star as that component of the absolute motion which is performed at right angles to the sight-line. From this it follows that the proper motion is only a part of the absolute motion with which any particular star is endowed. The proper motions are learned by comparison of catalogues made at considerable intervals of time and reduced to the same epoch. He explained the nature of the reduction applied in such cases. The shift or drift of the stars appears in general to take place in straight lines, and affords no support to hypotheses as to a central sun or central point round which all the stars move in closed orbits: In fact the very contrary seems proven, since the paths of the stars lie in all possible directions and are travelled at very different rates of speed. It is however by no means uncommon to find two or more stars in the same region of the heavens, moving in the same direction and apparently with equal velocities. This curious fact is true, not merely of clusters such as the Pleiades, but even of many stars in constellation-groups, (such as Ursa Major etc.). He gave ~~some~~ calculations showing the enormous distances which must separate the individual stars in some of the groups possessing common proper motion. He showed how it may be demonstrated that the proper motions of some stars indicate enormous velocities of translation for these bodies, exceeding, often, 200 miles a second. By tracing backward the paths of some of the swift-moving stars, though now separated by considerable distances, he showed that these bodies have apparently come from the same region of the heavens. He touched on the deep interest which these great mysteries cannot fail to excite in the thoughtful mind, and urged that more attention be given to the study of the individual stars.

April 28/03

The Regular meeting of the Royal Astronomical Society of Canada was held at the Canadian Institute on Tuesday evening April 28th at 8 O'clock the second vice President W.B. Murray in the chair

Communications were reported as being received from Ian Arthur Harvey Prof Leon of Mexico and from Joseph Pope C.M. of Ottawa Mr Andrew Elvins and W.H.S. Monck the latter contributing a paper entitled "The Limits of the Universe" Mr Sumner also reported the receipt of communications from Louis Swift, Walter Wescorder, Mr Wadsworth, Mr Brashear and Miss Agnes M. Clark

Mr Hamilton made some suggestions regarding the arrangement of the printed list of meetings and the advisability of arranging it in such a way that new matter might be discussed from time to time as points of interest might suggest themselves during the year

Mr Sumner withdrew his paper on "The Pleasure of the Telescope" for a time in order that a discussion of the astronomical features of a recent article by Alfred Russel Wallace might be discussed at the next meeting on May 12th Mr Chant was requested to prepare some notes on the physical properties of radium to be presented at a future meeting

* Mr A.F. Miller then presented the third of a series of papers on Stellar Motions, dealing particularly with the proper motions of the stars

x Under Observation, Mr Sumner drew attention to a large sun spot, ^{14th & 26th April} centrally located and showing the penumbra full and deep on one side and narrow on the other, as if ^{the depression} if it be a depression - were situated away from the radial line drawn from the sun's center through the spot Mr Miller also reported having observed spots and prominences also that period Mr Sumner produced a drawing of the planet Mars ^{observed} on April 18th showing spots of greater apparent whiteness than the pole

J.R. Collins

W. F. Chisari
Paul

May 12/03

The regular meeting of the Royal Astronomical Society of Canada was held at the Canadian Institute on the evening of May the 12th

The President R. F. Sluypart F.R.S.L. in the chair

The minutes of the previous meeting were read and confirmed

Communications from

Prof Luis G. León Sociedad Astronómica de Mexico, Mexico City - ~~intentionally~~ ^{including himself} that several of the members of that Society ~~contemplated~~ ^{contemplated} visiting Canada ~~to~~ ^{to} observe the eclipse of the Sun in 1905 and asking for information as to the best locality for viewing it - The Professor also sent several copies of his "Catalogue of Nebulae and Star Clusters" for the library

~~from Prof. Parnis of the Lick Observatory.~~

Prof Albert S. Flint of the Washburn Observatory, Madison, Wis in reply to a query as to the ^{to be used in the accuracy} ~~reliance~~ of minute ^{fractional} measurements of angles generally found in the determinations of stellar parallaxes - said that in general the probable accuracy of any determinations did not depend on whether the angle measured was large or small, a possible ± 2 error being allowed for in the measurements of proportional magnitude

The report from Council, ^{approving of and} ~~recommending~~ the adoption of the Special Observatory Committee's report as the securing of a site for an observatory in the grounds of Trinity University - was read and discussed

Mr John A. Paterson moved ^{seconded by Mr Withers} an amendment to the report that "as a first step we recommend that negotiations be opened up with the authorities of Toronto University and Trinity University so as to have the question of possible site definitely settled"

The amendment was declared lost and the Report from Council was adopted

May 6/03

a meeting of Council was held at the
residence of the president ^{R. F. S. [unclear]} in the observatory
grounds A report from the special
Observatory Committee was received
and discussed

Members of Council
Vassett
Marshall
Langdon
R. F. S.
Dunn
Baker
Miller
Ridout
W. Marshall
Collins
Harvey

Moved by G. E. Lunsden
seconded by Arthur Harvey

That the reports be adopted and
the members of the
the committee be reappointed
with power to add to their numbers
and be empowered to carry out the
suggestions contained in the report
Carried

W. R. Lunsden secretary

Mr. [unclear] Mr. [unclear]
that the report from be accepted

Mr. Patterson
Mr. [unclear]
Mr. Miller

An amendment moved by Mr. Patterson.
5-9

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

Report of Special Committee on Observatory, etc.

Your Committee having carefully considered the ways and means for providing suitable Headquarters for the Society, including an Observatory and a large telescope, beg to report as follows:-

I

To provide suitable and attractive accommodation, including observatory, reading room, lecture room, social rooms, with furniture, would cost probably not less than \$12,000 or \$13,000; and a 12 inch telescope would cost some \$10,000 or \$12,000. This means a total expenditure of about \$25,000, not including cost of land.

As to site, it would be necessary either to have a piece of land of very considerable size, so as to give free horizon in all directions, or else to acquire a smaller lot so situated that it could not be hemmed in by buildings. To purchase such a site, with the limited funds which we can hope

to obtain, seems to be quite out of the question. Your Committee therefore consider that unless a free site can be obtained it is useless to try to go on with the scheme at present.

Besides the cost of erecting a suitable building and of purchasing a telescope the annual cost of maintenance must be considered. A caretaker would have to be engaged, the building heated and lighted, and other necessary expenses incurred, ~~in addition~~ in addition to those which the Society is now under. Altogether, your Committee feel that provision should be made for an annual income of not less than \$2,000 a year, for the successful carrying on of the operations of the Society under the new conditions *Contemplated.*

II

Having now stated the needs as they present themselves to your Committee, it remains for us to recommend the ways in which we consider that they could best be met.

(1) As to Site. Through the interest taken in the Society by one of the members of the Committee, who is closely associated with Trinity University, your Committee have entertained the hope that a suitable site might possibly be obtained free of cost in the large grounds surrounding Trinity College,

3.

which comprise between thirty and forty acres. If the University authorities could be persuaded to give us a suitable location in these spacious grounds on a long lease renewable, at the nominal rental of \$1 a year, on condition that the plans of the building to be erected upon it are subject to their approval, and that their students in Astronomy have access, under proper restrictions, to our instruments, your Committee are of the opinion that such a site would be admirably adapted to the purposes of the Society, and that its acquisition would give just the impetus which is needed to the movement for providing funds for ^a new building. If a site in these grounds cannot be obtained, your Committee does not see their way at present to suggest any other site that they might hope to obtain free of cost, unless it be so far away as to be not easily accessible. We would therefore recommend that, as a first step, negotiations be opened ^{up} with the authorities of Trinity University, so as to have the question of site definitely settled.

(2) As to Building and Telescope. Two plans have been discussed by your Committee for raising the \$25,000 for the building, instruments, etc. One is to institute a canvass for

direct subscriptions in all the more important Canadian cities, in the hope of raising in this way the whole of the sum required for all purposes. The other plan is to try to provide part of the amount by forming a Joint Stock Company, who would erect the building and lease it to the Society at a rental which would provide a fair return upon the money invested. Then, some means ~~could be adopted~~ ^{might be devised} whereby the Society could purchase a certain amount of stock from the company every year, and in this way the building would in course of time come into the possession of the Society. Your Committee think that the advice of some of the leading business men of Toronto should be asked as to these two plans. Whatever be the plan adopted, the Society could, of course, only look for support from those who would give it, whether in the form of stock subscriptions or of direct cash ~~subscriptions~~ ^{contributions}, from a desire to aid in the study of Astronomy, and with a view to affording the Royal Astronomical Society of Canada the status and dignity which it ought to enjoy. Moreover, whether the building be provided in one way or the other, the cost of the telescope would have to be collected, in cash.

(3) As to cost of Maintenance. An enlarged roll of

5.

members and an increased membership fee seem to your Committee to be absolutely necessary to ensure proper provision for the operations of the Society, and the maintenance of the proposed Observatory. We would recommend an associate membership fee of \$10 per annum, without limitation as to numbers, with provision made for, say, 100 active members at the present fee of \$2 per annum. Your Committee is of the opinion that at least one or two hundred men could be found in Canada who would be quite willing to help in promoting the study of Astronomy by payment of a \$10 associate membership fee. The Society would of course have to maintain their interest by the issue of publications from time to time, and by public meetings and lectures, to which at least one eminent astronomer from England or elsewhere should be brought every year.

III

If the Society approve of the foregoing suggestions and recommendations, your Committee would add the further recommendation that they be re-appointed; with power to carry out the same and with permission to add to their numbers.

All of which is respectfully submitted.

Georg Ridant
Chairman

The meeting then took up the discussions of the
 astronomical ^{features of} the Alfred Russel Wallace's recent article on "Man's place
 in the universe". The Secretary presented Mr Wallace's
 views re - the limits of the universe, the position of the solar
 system therein and the ^{physical} surface conditions of other planets
 in space after which Mr Sumner presented the
 points that have been urged against Mr Wallace's position
 by the astronomical authorities that have criticized the article
 - viz Prof W.W. Pickering, E.W. Maunder, Prof Turner and Flammarion
 the hour then being late further discussion was held over
 for a future meeting

P F Shepard
 Pres.

For Recorder
 W. B. ...

May 26th 1903

The regular meeting of the Royal Astronomical Society of Canada was held in the Canadian Institute on May 26th 1903. The President R. F. Stewart F.R.S.C. in the chair.

Communications were reported from

G. Parry Jenkins F.R.S. of Hamilton Ont in reference to greetings of this society sent through the Astronomical Society of Wales an acknowledgment of which appears in their last report

From Prof Perrine of the Lick Obs in which he expressed the opinion that the light observed from the nebula around Nova Perseus is probably a direct radiation rather than reflected light

From Prof Campbell Director Lick Obs in answer to a query as to the possible shifting of the point towards which the sun is moving in space. Prof Campbell says there is no evidence that the sun has moved in other than a straight line for the last one hundred years and from Prof Madler of Trinity University in reference to observation site

Mr. Wright referred to his visit to Hamilton he had addressed the Hamilton Astronomical Society there and had been commissioned by them to convey to this society their good wishes

The President reported having attended the annual meeting of the Royal Society of Canada at Ottawa on May 19th and had presented the report of this society for 1902. The change of name was referred to and was well received

Mr. Musson commented on the fact that the present being a favorable time for spectroscopic observation of sun spots as the sun appears to have just passed the point of minimum disturbance. A distinct change in the spectrum

2.
- it has been claimed - takes place after maxima and minima, due not directly to the sunspot cycle but dependant apparently upon an intrinsic increase of energy in the spots, the greatest internal activity manifesting itself during the periods named

Mr J. L. Blake of the observatory then read his paper on "The adjustment for the Equatorial Telescope"; the advantages of this equatorial mounting was ~~pointed~~ emphasized and the methods of adjustment were fully described.

for the Recorder
J. R. Ballou

Chant
V. Pres.

a council meeting of the Society was held on Friday evening May 29th in the Library

Moved by Mr Musson

Seconded by Mr Chant that the treasurer of the Society be authorized to pay to the proper accounts of the Observator Committee for preliminary expenses to the extent of \$200⁰⁰ provided, such accounts have been passed by the committee and certified as correct by the chairman and are approved by the President of the Society - Carried -

Members of council present were

The President (Mr Stupart) Mr Sumner, Mr Miller, Mr Musson, Mr Peterson, Mr Edwin de Chant and Mr Collins

The Librarian was authorized to purchase a copy of Scherwin's ~~specimens~~ ^{transmitted by Frost} the publication of occasional papers in the form of a Bulletin was discussed and a recent paper of Mr Musson's was submitted to Mr Peterson to report on the advisability of immediate publication.

Trinity College.
Toronto.

14th May, 1903.

R. F. Stupart, Esq.

resident of the Royal Astronomical Soc'y of Canada.

Queen's Park, Toronto.

Dear Sir,

I duly received your letter of 13th instant yesterday morning, and laid it before the Corporation of Trinity University at the Semi-annual Meeting held in the afternoon.

It gives me very great pleasure to inform you that the propositions contained in your letter as to site for the proposed Observatory were agreed to by the Corporation.

The more exact delimitation of the site was referred to our Board of Endowment and Finances, who have taken charge of the laying out of the grounds. I have since spoken to several members of this Board, and have ascertained that there is no objection to the location that your letter suggests.

Hoping that the plans of the Society will be entirely

successful, and assuring you of my readiness to help on the
undertaking in any way that I can, I am, dear Sir,

Very faithfully yours

J. Machlem

Provost of Trinity College.

June 9/03

The regular meeting of the Royal Astronomical Society of Canada was held in the Canadian Institute on June the 9th. Just this President Mr C. A. Chart in the chair. The minutes of the former meeting and report from Council were read and expounded.

Communications were reported from Secretary of the British Association for the Advancement of Science relative to the meeting of the Association in Southport England in September next.

from J. A. F. Kalam Battelport N.W.S. offering to send the society copies of photos of geological fight that he had taken in Java, Sumatra and Borneo.

Mr Chart then gave some practical demonstrations in Wireless telegraphy with a duplicate set of apparatus which were set up in different rooms and messages sent to and from groups of members in each room. The apparatus used being that supplied by the Helix Company to ~~Chart's~~ University for Mr Chart's use in investigations he is now carrying on in relation to the nature of disturbances taking place when messages are transmitted.

Mr Arthur Hargreave read his paper on "Rotation - a misleading term as applied to the Sun" in which he pointed out that the fact that differing belts of the sun's surface rotate at different periods precluded the use of the rotation of the sun was rather an indefinite period.

R. F. Stewart.

For Registrar
W. H. ...

June 23/03

The Regular meeting of the Royal Astronomical Society of Canada was held in the Canadian Institute on June 23rd. The President R. F. Stewart in the Chair. Report of former meeting was read and confirmed. Communications were received from the Secretary of the Franklin Institute, from the Secretary of the Sociedad Astronómica de México.

Observations Mr. Miller reported observations of gamma (γ) Draconis

Mr. Pursey and Mr. Elwin reported observing sun spot. Mr. E. had observed at the Observatory on April 30th a peculiar spot - a part of which appeared in Knowledge for June 2nd.

Under notes and queries the president referred to an article of Prof. Russell of New South Wales in regard to the influence the moon on the weather. In looking over the records Mr. Stewart failed to find any reliable data that would support Prof. Russell's views.

The paper for the evening was presented by Rev. Robert Atkinson on "Helmholtz's life and work" was received and the distinguished German physicist's contributions towards the establishment of the doctrine of the "conservation of energy" was emphasized.

Prof. Dr. Luis León, Prof. of Physics in Normal School Mexico and Secretary of the Sociedad Astronómica de México, and Mrs. Dolores González de León, his wife graduate of the Normal School of Mexico and member of the Astronomical Society of France - were nominated as honorary members (without fee) - by Mr. Rollins and R. F. Stewart.

Rollins

R. F. Stewart
President

Open air meetings of the Society
were held at the Observatory Inver's park on nights
of July 7th and 9th and 21st - a large number
of citizens and visitors took advantage of the
opportunity of viewing the lunar surface and
several of the planets through the large telescope
as well as the several telescopes provided by
the society -

On Sept 12th a number of members of the Society were entertained at a lawn party on the grounds of Mr John Ellis Swanson where an enjoyable evening was spent a group of early comers were photographed by Mr Ellis though the attendance was not large & all expressed themselves as debtors to Miss host for the entertainment provided and for pleasant setting

Sept 15/03

The Regular Meeting of the Society was held in their rooms Canadian Institute on the evening of Sep 15th 1st Vice President Dr C. G. Chant in the Chair

Communications were reported from W. H. S. Monte Dublin Ireland re-a corrected list of ^{the faces of} aerolites which he wanted Mr Harvey to review before it appears in print - from Rev J. E. Espin Bar Low Agnes M. Clarke, E. Walter Saunders, W. H. M. Christie Dr Isaac Roberts, Prof Rutherford Mr John G. Watson re-the securing a delegate to represent the Society at meetings of British Association for the Advancement of Science at Southport England and from Dr Wedgworth Junior and the Trade Committee expressing regret on hearing of the illness of Mr Simonsen

Prof Leon of Mississ and his wife were declared elected associates (honorary) of the Society -
nominations as associates

J. A. Burns, 13 Bloor St Vancouver British Columbia
by W. Phillips and Andrew Elvins

Kenneth M. Chapman 15 Spencer Avenue Frank
by Andrew Elvins
W. Phillips

J. F. Thompson B. A. High School Teacher Simcoe Ont
Mr A. F. Miller of same the method of structure and the uses of a number of instruments - presented to the Society by Miss Carpenter a number of experiments were performed with the spectrometer and the spectrum of a number of the elements were shown Dr Chant assisting at the lantern
The Secretary and the Treasurer were re-elected to office

input
page

The Regular meeting of the Royal Astronomical Society of Canada was held at the Canadian Institute on Sept 29th. The President R. F. Stewart F.R.S.E. in the chair.

After the reading of the minutes of the previous meeting the President referred to the great loss the Society had sustained by the death of its former active member and past president Mr George Edward Sumner. ~~Mr Sumner~~ who had been one of the first charter members in 1890. Mr Sumner had served the Society as an officer ^{in some capacity} ever since, and had also taken a leading part in shaping the policy. Few indeed of our members were as diligent ~~and~~ thorough in their methods of work as our past president and very few in our country had as deep or accurate knowledge of our beloved science. We miss him now not only because of his scientific attainments but also because - he felt sure - each and every member had learnt to ~~esteem~~ ^{regard} him as a friend and courteous gentleman always.

It was then moved by Mr Elwin seconded by Mr Hamilton that the President be requested to appoint a committee to prepare a suitable address mentioning the valuable services of the late George E. Sumner F.R.S.E. - the thanks of the Society and their appreciation of them, and regrets at his loss - and that such address be engrossed and forwarded to Mrs Sumner - ~~Secretary~~ ^{Carrier}.

Mr James Mr Guy Redout Mr Miller Mr Elwin and Mr Hamilton were appointed a committee to draft & take the matter in charge.

Prof Mr Atkinson reported having been present at the entertainment at Hamilton whether he had been sent as the Society's representative.

Prof Luis Leir and his wife Misses Ag. Messers.

J. A. Burns Esq.

J. F. Thompson Esq. were elected members.

Mr. J. M. Williams Hamilton Ont.

Mr Atkinson Mr Miller and Mr Pursey reported observing the unusual activity on the surface of the sun. Mr Hamilton reported observing a meteor on the night of Aug 7.

Sumner's had been of secret merit in his time about - he a fellow of the Astronomical Society of England & member of Astronomical Society of France & Hon. Member Astronomical Society of Mexico

Sumner
R. F. Stewart
Hamilton

sep 29, 1903

Moved by Mr. Elvins —

seconded by Mr. Hamilton L. L. B.

That the President be requested
to appoint a Committee to prepare

a suitable address recognizing the
valuable services of the late

George E. Lunsden F. R. A. S. — to
this society and their appreciation

of them and regret at his loss —
and that such address be

engraved and forwarded
to Mrs Lunsden.

(See Pyper's address)

At the meeting of the R. A. S. C.
Oct 27th Mr Weatherbee called
the attention of the society
to the motion of the sun-spots
and placed diagrams ^{on the screen} of the
black board to prove by the motion
of the spots that the Earth rotated.
This was not reported in the minutes
and should be added in the report
of that meeting
Nov 17th 1903 A Elvins

P. S. This apparent rotary
motion of the sun spots on the
sun's disc is ⁱⁿ the same direction
in both erecting and inverting
telescopes, while the regular
motion caused by the sun's
rotation is inverted in
nonerecting telescopes
was also pointed out
at the same time and
meeting by J. H. Weatherbee.

Nov 14th 1903

The regular meeting of the Royal Astronomical Society of Canada was held in the Canadian Institute on Tuesday evening Oct 13th The President R. F. Stewart F.R.S. in the Chair

Communications

were reported from the Wadsworth of Jamaica as the Mayor of Hamilton, Prof. Leon of Mexico thanking the society for electing him & as honorary associate of this Society and from Mrs. Lumsden

J. W. Williams, Hamilton was elected as an associate

Rev. Mr. Atkinson gave the predictions of positions of Mercury Venus and transits of Jupiter across

A number of the members had noted an unusually brilliant aurora on the evening of the 12th - at first cloud-like formations were seen that form in the north and N.E. which advanced rapidly with occasional rapid ventilation and waving motions. Notwithstanding their denser parts some of the brighter stars but before reaching the zenith the cloud formation rapidly dissolved leaving a clear sky again to be followed by a regular appearance of weaker and weaker intensity. This aurora had been extensively observed throughout the county to the north. Mr. Muller had reported having been fortunate enough to have observed the spectrum of the aurora and had compared it with the spectrum of nitrogen

The unusual activity on the solar surface was also commented upon by several of the members. Mr. Perry, Mr. Wetmore and Mr. Blake of the Observatory. Mr. Blake produced his sketch book in which he had noted the positions and general appearance of spots. On the 5-6-8-10-12th of Oct. the group was computed to have covered an area of some hundred thousand miles in extent

Mr. Stewart reported unusual storms at this period along the Atlantic coast but was unable to say whether this was a mere coincidence or not

Notes & Queries

Mr. Phillips presented a number of periodicals containing some papers of his dealing with his theory of cosmic projection

Oct - 27/03

The regular meeting of the Royal Astronomical Society was held the evening of Oct 27th - the first Vice President Mr. Hunt in the Chair.

The ~~reading~~ "minutes" of the previous meeting were read and confirmed.

Communications

A letter was read from Mrs Lumsden thanking the members of the Society for the floral tributes sent to her late husband during his illness. Also communications from Mr. March of Hamble and Mr. Wadsworth of Limer expressing regret at the death of Mr Lumsden.

A report of ~~the~~ ^{meeting of} Council on Nov 19th was read in which reference was made to the removal of Mr John Killebrew from Toronto to New York ~~consequently~~ ^{in view of} his retirement from the active work of the Society. It was understood that the Secretary would attend to the duties of the Records for the balance of the year.

The issue of a report for 1903 on the lines of the report of 1901 was authorized.

An appropriation of £25⁰⁰ was granted for cover the expense of a memorial address & as an appreciation on the part of the Society of Mrs Lumsden was from the following gentlemen were appointed chairmen of sections whose duty would be as far as possible report at the various meetings points of interest connected with developments of the work of included under the various sections viz

- The Moon Rev Robert Atkinson
- " Sun by Arthur Harvey
- " Planets W. Collins
- " Stellar work and Spectroscopy G. F. Muller

The Paper for the evening was entitled "Radars" and its bearing on Astronomical Physics

R & S. - a
P. 10

Nov 10/03

The regular meeting of the Royal Astronomical Society of Canada was held in the Canadian Institute on Tuesday evening the 10th of November, the President R. F. Stewart F.R.S.E. in the chair

Communications were reported from Lewis Swift Prof Tom Munro, Joseph Pope, Ottawa. G. A. F. Raland (Battleford) and from the Gover director the Canadian Observatory by Mr Regis Eyles announcing the fact of a presentation to this society of several volumes of observations on variable stars by his lady Peck

Observations

Mr Stewart reported details of the magnetic disturbances on the 29th and 30th of Oct. Copies of the magnetic curves for the latter days were shown and it could be seen from them that the magnetic disturbance was so violent as to drive the needle clear across and off the paper registering paper, on this night the aurora was unusual bright and active

Mr Chant reported that the magnetometer he had been working with at the University - to be so seriously disturbed as to be practically useless on that day, he also reported that he was informed that the wireless telegraph instruments in use on the same day had suffered no disturbance, whilst the ordinary telegraph systems were completely deranged at many places for several hours

Mr Blake reported his extended observations of sun spots covering the period mentioned, an unusually large outbreak having been observed. Mr Pursey, Mr Elwin and Mr Withers also commented upon them

References were made to the markings on mercury observed by Antonie in the English Mechanic of Oct 30th

Mr Phillips presented to the members copies of his paper on projection and tidal action on planetary formations

The paper for the evening was by Arthur Hawley F.R.S.E. on "translucence" or "disabilities" with special reference to that which fell at Mexico

W. Collins

R. F. Stewart

Memo.

Nov. 24/3

Since the last meeting no new large spots or groups have appeared upon the Sun's surface until to day when a rather large disturbed region on the S.E. limb was observed this morning. The last large group of spots disappeared over the western limb about the 16th - A small spot was seen on the 18th and on the 20th had broken into a very small group of very small spots. To day it appears as a single small spot without penumbra - Isolated very small spots were observed on the 13th and 14th but disappeared by the 18th.

- prediction of phenomena -

Nov. 27th Jupiter in Conj. with ♃ - Jupiter $3^{\circ}19' S$
" 28 Venus at greatest elong. W $46^{\circ}46'$
Dec 5th Neptune in Conj. with ♃. Neptune $3^{\circ}57' N$

Wm. Blake

4
3
Sun spot notes

Since our last meeting we have had the return of the great group of spots which passed the central meridian of the Sun about the 10th Oct. last. The return of this group was first noticed at the Observatory on the morning of the 2nd Nov^r. There was at this time a very large area of faculae surrounding it, in fact the largest noticed for years. No doubt this area of faculae could have been seen on the 1st. As this group came more into view it was seen to be composed of four nuclei connected together by large numbers of small spots and surrounded by a very large disturbed region of faculae. The group extended in an easterly and westerly direction to a vast distance. At present Nov 9th it has shown signs of decay and broken up into two groups, the most westerly part being composed of a multitude of small spots. Preceding this large group was another very conspicuous and large group composed principally of two great nuclei separated by a small

interval - These two spots passed north
of the centre of the sun Nov^r 5th maintaining
their size and shape fairly well up to the
present time - This is also a return of the
group near the centre of the sun on Oct 8th.

These two groups with a small one
which disappeared over the western limb
greatly diminished in size were the
principal objects of interest on the sun
during the last two weeks.

Nov 24/03

The regular meeting of the Royal Astronomical Society of Canada, was held in the Canadian Institute on the evening of Nov 24th. The President R. F. Stewart ~~W. B. C.~~ was in the chair. The minutes of the former meeting were read and confirmed.

Communications were reported from the University of Montreal from Dr. Brachear and from G. A. F. Palangy.

Mr. Harvey, Editor of the Transactions reported progress in regard to the Society's publications and asked that an advisory committee be appointed to assist him in the preparation of the ^{present} Report. A committee for this purpose, consisting of the President Mr. Munson de Chant and the Secretary ~~was~~ appointed for this purpose.

Mr. Blake reported observations of sun spots and gave some predictions for observation. Sun spots reported to be less numerous than formerly.

The President called the attention of the members to a communication received by him from John R. Harris Dublin Ireland in reference to a shower of Leonids which were predicted for Nov 24th. The members ~~that~~ who could conveniently do so were asked to look for them between the hours of 2 and 4 a.m. The paper for the evening by Dr. Chant on "The nature of ether vibrations" (Rolling
writing)

Dec 8/03

The last meeting of the Royal Astronomical Society of Canada was held in the Canadian Institute on Tuesday evening Dec 8th
Hon President Dr Chant in the Chair
Communications were reported from
Prof Hale of the Yerkes Observatory
The University of Montreal

Nominations for Associates

Chas J. Kelly B.A., M.A. 225 King St W Hamilton
E. H. March and John A. Peterson

Report from Council was read and the following nominations for officers and members of Council for 1904 were made

- Hon President - The Hon Richard Hareourt K.C., LL.D. M.P. Minister of Education Prov of Ont
- President - C.A. Chant M.A., Ph.D. Lecturer in Physics Trinity University
- First Vice President - W. B. Morrison
- 2nd " " - Prof A. J. Cleary Prof Astronomy Trinity University
- Treasurer - J. Edward Mayhew M.E.
- Secretary - J. Rollins
- Recorder - Elsie A. Hunt
- Librarian - Alfred McFarlane M.A.
- Curator - Robt Fleming

for Council

- Rev Robt Atkinson - John G. Ridout C.E.
- A. F. Miller - Joseph Pope Esq. of Ottawa
- Rev J. C. Street Macleam - Rev H. March Hamilton
- George Ridout - G. G. Pursey
- A Sinclair M.A. - Robt Stewart

There being no further nominations the officers were declared elected by ~~acclamation~~ acclamation leaving three members to be elected on Dec 22nd
Mr Keller's request for a set of the Society's transactions for to date for Observatory Council account was accepted
Papers for the evening were by Miss Elsie A. Hunt on "Woman's contributions to astronomy" and Rev H. March "How I built and equipped my Observatory at Hamilton"
a paper was read by Mr. [unclear] on the Pacific

J. Rollins

Dec 22/04

A regular meeting of the Royal Astronomical Society of Canada was held in the Canadian Institute on Dec 22/04

Vice President Mr Chant, in the Chair
Communications were reported from Prof Leon of Mexico, Judge Morrison of the Owen Sound Society, and from Mrs G. E. Lumsden thanking the members of the Society for the tribute paid to the memory of her late husband - in the form of an engrossed memorial address - which had been signed and presented to her

Chas D. Kelly 225 King St W. Hamilton Ont was elected as an associate member

Nominations

H. E. Rogers J. Smith as Associate Member by { Mr Atkinson
Prof W. Wolfen Director, the Observatory Zurich Switzerland } Mr Howell
Fellow by { Mr Harvey
Mr Elvins }

Mr A. F. Miller, Rev Mr Marsh (Hamilton) and Rev Robert Atkinson were elected as members of Council for the year 1904 The officers and

- Members of Council for 1904 thus being
- President C. A. Chant M.A., Phil. D.
- 1st Vice President Prof A. J. Leury
- 2nd " " W. Balfour Murray
- Treasurer J. Edward Mayhew M. E.
- Secretary J. R. Collins
- Recorder Miss Elsie A. Heit
- Librarian Alfred McFarlane M.A.
- Chancellor Robt S. Duncan

Council elected - A. F. Miller, Rev Mr Marsh, Rev Robt Atkinson and the following Past Presidents - Andrew Elvins, Mr Lovatt W. Smith, John A. Paterson M.A., Arthur Harvey F.R.S.C., and R. F. Stewart F.R.S.C.

The paper for the evening was a very interesting and instructive one by Mr John A. Paterson on "Notes of a Visit to the Greenwich Observatory" papers by title were read by Mr Elvins on "The Nature of Matter" and by Mr Chant on "

For Recorder
J. R. Collins

President

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

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

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

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

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

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

The Toronto Astronomical Society

1903

January-August Session

PAPERS, ETC.



List of Officers:

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

Council:

The above officers, with the following members, constitute the Council of the Society: Mr. A. F. Miller; Professor A. T. DeLury, B.A., and Mr. George Ridout, elected by the Society, and the following Past Presidents: Mr. Andrew Elvins; Mr. Larratt W. Smith, K.C., D.C.L.; Mr. J. A. Paterson, M.A. (Tor.); Mr. A. Harvey, F.R.S.C., Honorary President and Director of La Institutio Solar Internacional Monte Video, Uruguay; and Mr. G. E. Lumsden, F.R.A.S. and Membre de la Societe Astronomique de France.

PAPERS, ETC.

1903.

Jan. 13th.—Experiments with Physical Apparatus.

Jan. 20th.—“Address.”

THE PRESIDENT.

Feb. 3rd.—“Celestial Measurements.”

PROF. DELURY.

Feb. 17th.—“Stellar Motion.”

MR. A. F. MILLER.

March 3rd.—“The Planet Neptune.”

REV. D. B. MARSH, D.SC.

March 17th.—“The Astronomy of Milton.”

MR. JOHN A. PATERSON, M.A.

March 31st.—“The Diatonic Scale.”

MR. GEORGE R. ANDERSON, M.A.

NOTE.—This lecture will be in the Main Building of the University.

April 14th.—“Is the Moon a Dead World?”
MR. J. EDWARD MAYBEE, M.E.

April 28th.—“Stellar Motion.”

MR. A. F. MILLER.

May 12th.—“The Telescope as a Companion.”

MR. GEORGE E. LUMSDEN, F.R.A.S.

May 26th.—“The Adjustment of the Equatorial Telescope.”

MR. F. L. BLAKE, D.L.S.

June 9th.—“Rotation: a misleading term as applied to the Sun.”

MR. ARTHUR HARVEY, F.R.S.C.

June 23rd.—“Helmholtz.”

REV. ROBERT ATKINSON.

July 7th.—Open Air Meeting.

July 21st.— “ “

Aug. 4th.— “ “

Aug. 18th.— “ “