

Welcome to *The Jeety Starn*

Welcome to Issue 1 of *The Jeety Starn*, the quarterly newsletter of the Stirling Astronomical Society (SAS), which aims to publish information related to our Society and our Telescope, observations and articles by Society members and by guest contributors, and other items of interest to amateur astronomers. This first issue features a short history of our Society and Telescope, and articles by members, that we hope you enjoy.

Our Society

The Stirling Astronomical Society was formed in 1986. It is open to anyone aged 11 years or over with an interest in astronomy. Our Society has a range of observing and teaching equipment to encourage interest in astronomy, and we have the use of, and are involved in preserving, a 12.5 inch Newtonian reflecting telescope built in 1889 by William Peck of Edinburgh. Our historic telescope is located in a dedicated observatory on the roof of the Stirling Highland Hotel.

We meet from September to May during the year, in the Stirling Highland Hotel. During that period, we hold monthly public lectures on the second Friday in each month, that begin at 7:30 pm. Admittance is free and anyone with an interest in astronomy is welcome. We also hold informal monthly members' evenings, on the last Friday of each month.

The Society runs a regular series of evening classes at the Stirling Highland Hotel. These are informal, open to anyone over 11 years old and topics vary in each course, covering basic information to develop a good understanding of modern astronomy. The classes run once a month on Thursday evenings from 7:00 until 9:00 pm and are based on what can be seen in the sky over the month. If the sky is clear, the 12.5 inch Newtonian reflector in the observatory on the roof of the hotel is used. The current evening class cost is £5.00 per class.

Our Telescope

The Society is lucky to be able to use a historic telescope sited in the centre of Stirling City. It sits in a dedicated observatory on the roof of the former Stirling High School, now the Stirling Highland Hotel.

The telescope belongs to Stirling Council. A Newtonian reflector, it has a primary (concave) mirror of diameter 12.5 inches and 9 feet focal length (i.e. aperture f/9). The mirror sits at the lower end of an oak telescope tube. Near the top of the tube, a small diagonal flat mirror reflects the primary image into an eyepiece outside the tube. It has a German equatorial mount supported by a cast iron framework, which in turn sits on a bedplate on top of a massive brick plinth extending through the observatory floor. The observatory has a rotating domed roof sheathed in copper whose green surface makes it a familiar landmark above the Old High School in Spittal Street, Stirling.

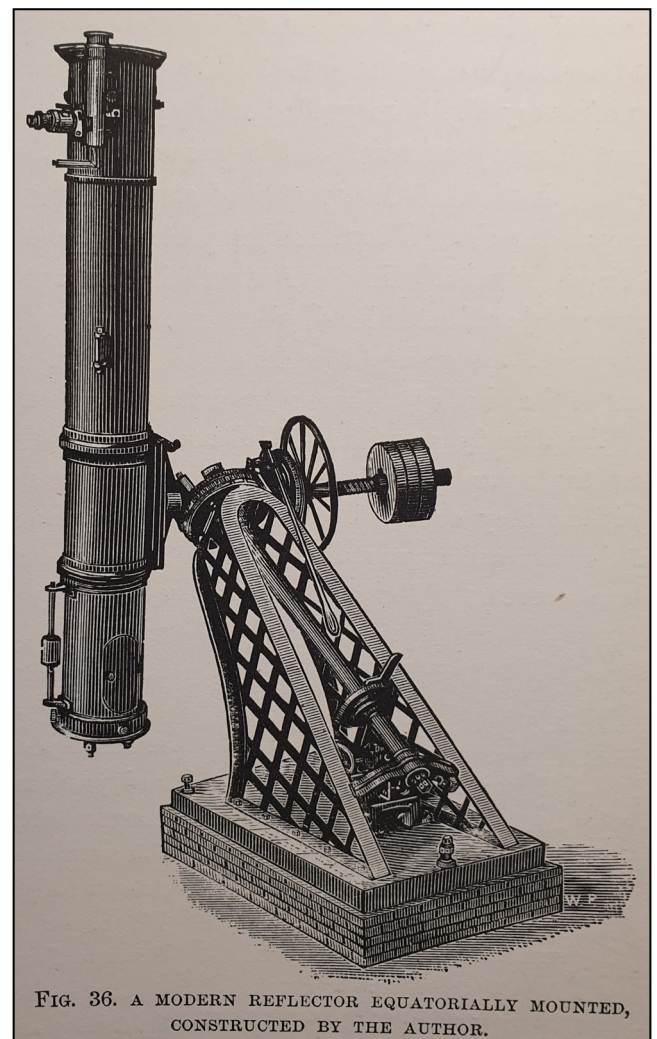


FIG. 36. A MODERN REFLECTOR EQUATORIALLY MOUNTED, CONSTRUCTED BY THE AUTHOR.

The telescope (original illustration above) was designed, constructed and installed by William Peck

(1862-1925) in 1889. He was then City Astronomer of Edinburgh, and became famous as a writer of popular astronomy books and as a prolific inventor. He was knighted in 1917. The illustration of the telescope is taken from: William Peck, FRSE, FRAS (1890) *A Popular Handbook and Atlas of Astronomy*. (Designed as a Complete Guide to a Knowledge of the Heavenly Bodies; and as an Aid to those Possessing Telescopes). Published by: Gall and Inglis, 25 Paternoster Square, E.C., London; and Edinburgh.

Early Use

The telescope was given to the school by Mr Laurence Pullar of Bridge of Allan, in September 1889. The observatory was the gift of Mr Henry Campbell-Bannerman, Liberal MP for Stirling Burghs, who was knighted in 1895 and served as Prime Minister from 1905 to 1908.

The observatory tower was built as part of a High School extension in 1888-89. Its architect was James McLaren, a former pupil of the school, who died before construction was complete. The design incorporates the 17th Century gateway from the Town Mint and the entrance includes twelve stone carvings of the signs of the zodiac. A carved figure, *Astronomy*, was presented by Sir Donald Currie MP.

The observatory was originally in the care of Mr Lowson, Maths Master at the High School. By 1891, evening classes were being given during the winter months. Former pupils from 1906 onwards have no recollection of the telescope being used. A rumour persists that the eyepieces were requested by an observatory in Edinburgh, and were handed over about 1920. At a later period, but before 1960, a refractor telescope was taken from the observatory by sixth-year pupils as an end-of-session prank. Despite several reported sightings in various parts of Scotland, *that* has not been recovered.

Telescope Restoration

The telescope has been steadily restored over a number of years, as time and funding allowed. In 1973 Dundonian astronomer David Gavine, then teaching in Fort Augustus, asked for information for his Open University research into the history of Scots telescope makers. This led to a photographic survey of the condition of the observatory.

At the same time, growing interest in Comet Kohoutek (C/1973 E1) inspired staff and pupils in the school Physics Department to offer to check out the telescope with a view to restoring it. Weekly

restoration sessions took place between January and February 1974, organised by Dr Kenneth Mackay (1931-2014) and involving ten of his keen pupils and several specialist advisers. Technical help was given by Stirling University and Paisley and Falkirk Colleges. The telescope was restored to functional operation in April 1974, and is used extensively in the Society's regular courses of evening classes.



The High School Telescope as it is today.



Sir William Peck,
F.R.S.E., F.R.A.S.

A Meteorite Melange

By Sandi Cayless

Meteoroids are small pieces of interplanetary matter and range in size from dust grains to small asteroids. Many such enter the Earth's atmosphere as **meteors** and most burn up at about 100 km above surface. As these pieces move rapidly relative to the Earth, most are completely vaporised as atmospheric friction heats them to incandescence. The air in the particle's path is ionised, and the resultant light from the radiative emission of the ionised gas and the white-hot evaporating particle is seen as a trail as the hot gas cools.

If a larger interplanetary mass enters the atmosphere, the outer layers will disperse but the centre will survive, to hit the surface as a **meteorite**, at a speed of around 500 km/h. About 44 tonnes of meteoritic material is estimated to fall into the Earth's atmosphere every day and most is vaporised.

More than 2000 meteorites have been recovered, and are of three types: iron, stony, and stony-iron (the rare carbonaceous chondrites). Most come from shattered asteroids, but some come from Mars or the Moon. Meteorites can be traced to Mars because pockets of trapped gas within them correspond to analyses by satellites and rovers on Mars.

Several meteors an hour can usually be seen on any night (sporadic), but the number can increase considerably to become a shower. Some meteor showers occur annually as the Earth passes through the trail of dusty debris left by a comet, or in rarer cases, they are associated with an asteroid (e.g. 3200 Phaethon, the source of the Geminids).

Most annual meteor showers are consistent and occur at the same time each year, the peak of activity occurring when the earth passes through the densest part of the stream. Showers are usually named for the star or constellation in which peak activity (the radiant) occurs. The major showers are listed on the next page.

Meteorite samples courtesy of the Open University



Section of Iron Meteorite



Section of Iron Meteorite with Inclusions



Weathered Ordinary Chondrite



Pallasite red-lit to show Olivine Inclusions



Fragment of the Barwell Meteorite Leicestershire 24 Dec 1965



Meteorite from Mars

© Sandi Cayless

Major Meteorite Showers

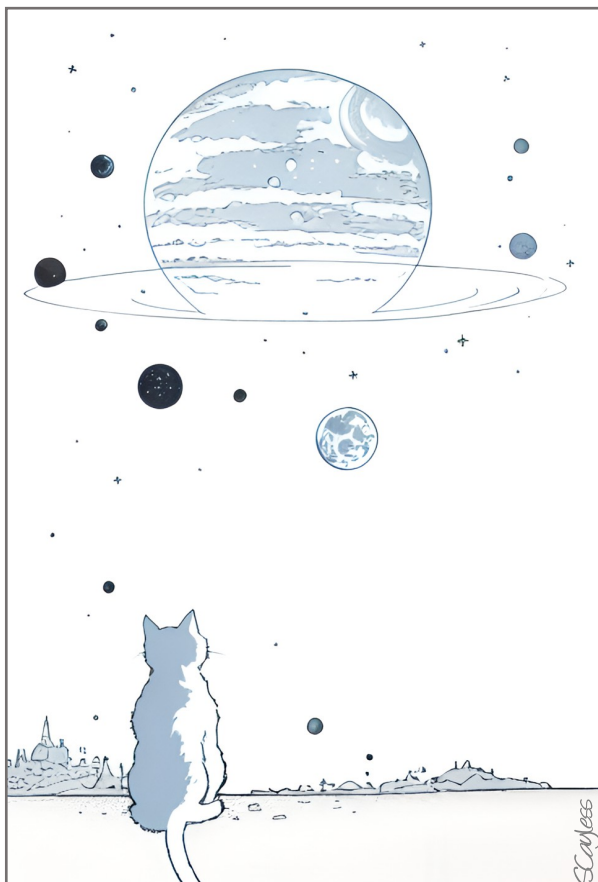
Shower Name	Dates	Usual Peak	Radiant	Source
Quadrantid	28 Dec-12 Jan	3 Jan	Boötes	*Asteroid (196256) 2003 EH1 (? Relic of comet C/1490 Y1)
Lyrid	14-30 Apr	22 Apr	Lyra (near Vega)	Comet C/1861 G1 Thatcher
Eta Aquariid	19 Apr-28 May	6 May	Eta Aquarii	Comet 1P/Halley
Alpha Capricornid	3 July -15 Aug	30 Jul	Alpha Capricornus	Comet 169P/NEAT
Delta Aquariid	12 July-23 Aug	30 Jul	Delta Aquarii	*Comet 96P Machholz
Perseid	17 Jul-24 Aug	12 Aug	Perseus**	Comet 109P/Swift-Tuttle
Draconid	6-10 Oct	8-9 Oct	Draco	Comet 21P/Giacobini-Zinner
Orionid	2 Oct-7 Nov	21 Oct	Orion	Comet 1P/Halley
Taurid (Southern)	10 Sep - 20 Nov	10-11 Nov	Taurus	Comet 2P/Encke
Taurid (Northern)	20 Oct-10 Dec	12-13 Nov	Taurus	Asteroid 2004 TG (? Fragment of 2P/Encke)
Leonid	6-30 Nov	7-18 Nov	Leo	Comet 55P/Tempel-Tuttle
Geminid	4-17 Dec	14 Dec	Gemini	Asteroid 3200 Phaethon
Ursid	17-26 Dec	22-23 Dec	Beta Ursae Minoris	Comet 8P/Tuttle

* Possible source

** In more modern times, now near the Cassiopeia/Camelopardalis border

Poetic Licence

Astronomical and other related phenomena have their places in literature ancient and modern, and there are many poems that either wholly or partially could be construed as having a cosmological angle.



Bryant, William Cullen: Hymn to the North Star

The sad and solemn night hath yet her multitude of cheerful fires;
The glorious host of light walk the dark hemisphere till she retires;
All through her silent watches, gliding slow,
Her constellations come, and climb the heavens, and go.

Coleridge, Samuel Taylor: The Rime of the Ancient Mariner part IV

The moving moon went up the sky,
And nowhere did abide:
Softly she was going up,
And a star or two beside.

Darwin, Erasmus: A Poem in Two Parts; Part 1: the Economy of Vegetation

Watch with unmoving eye, where CEPHEUS bends
His triple crown, his sceptre'd hand extends;
Where studs CASSIOPE with stars unknown
Her golden chair, and gems her sapphire zone;
Where with vast convolution DRACO holds
The ecliptic axis in his scaly folds,
O'er half the skies his neck enormous rears,
And with immense meanders parts the BEARS;
Onward, the kindred BEARS with footstep rude
Dance round the Pole, pursuing and pursued.

Leslie Peltier (1900-1980)

Stargazer Extraordinary

By Sandi Cayless

Leslie Copus Peltier was born on January 2nd 1900 in Delphos, Ohio USA, on a small farm with no electricity or running water. He was educated initially in a one-room schoolhouse, and then at a high school for three years (1915-1917). Described later (1934) as “the world’s greatest non-professional astronomer” by Dr Harlow Shapley, Peltier had twelve comets, six novae and more than 130,000 variable star observations to his credit over his sixty five years of observation.

In 1916, the young Leslie made eighteen dollars by strawberry picking on his father’s farm and bought his first telescope, a 2-inch refractor, for which he made his own mount. Later on, helped by his father, Leslie built an observatory on the farm for a 4-inch refractor he was loaned by the Variable Star Association at Princeton University, to which he belonged. He had to return that, but later in 1921, Princeton sent him a wide-field 6-inch refractor (aptly named the *comet-seeker*) with which he found his first comet, on November 13, 1925. Between 1925 and 1954 he discovered twelve comets, ten of which bear his name, and several novae.

Leslie married childhood sweetheart Dottie and moved southwest, continuing his astronomy and discoveries while working as a draftsman. He built what was believed to be the first observatory that could rotate to follow the stars (*the merry-go-round*, designed so that one tenth of the sky was visible at once – the wheels and circular track were stock parts for a children’s merry-go-round). He was later given charge of a 12-inch Clark refractor, which he repaired, along with its building, dome and transit room, by Miami University, Oxford, Ohio. He tells the story of the revival of the observatory from its pile of pieces in his first book, the autobiographical *Starlight Nights* (written 1963, published 1965). In 1934, Leslie was awarded the American Association of Variable Star Observers (AAVSO) first merit award, which read: “His faithful and untiring service has placed him in the front rank of variable star observers and his discoveries have won him international fame.”

This remarkable amateur astronomer was a member of the International Astronomical Union, honorary member of the AAVSO, emeritus member of the

American Astronomical Society, member of the Astronomical League and honorary member of the Lima Astronomy Club. He contributed to various magazines, including *Nature Magazine*, *Popular Science*, *Popular Astronomy*, and *Sky and Telescope*. In recognition of his contributions to astronomy and literature, he was awarded an honorary doctorate in Science from Bowling Green State University, Ohio in 1947. In 1965, a mountain in California, home of the Ford Observatory, was named Mount Peltier in his honour. Leslie wrote two further books, *Guideposts to the Stars* (1972) and *The Place in Jennings Creek* (1977), the latter detailing the history and grounds of his early home, Brookhaven. Leslie passed away on May 10, 1980, out by his observatory near his garden.

The Leslie C. Peltier Award of the Astronomical League, first awarded in 1981, is given annually to an amateur astronomer who has contributed observations of lasting significance. Asteroid 3850 Peltier, a Main Belt asteroid, discovered October 7, 1986 at Anderson Mesa by Ted Bowell, was named in his honour. An Ohio historical marker celebrating his life was unveiled at the Delphos Public Library on September 20, 2003 – Leslie had served 30 years as a library board member. The marker was placed next to the Peltier Memorial Sundial.

“Were I to write out one prescription designed to help alleviate at least some of the self-made miseries of mankind, it would read like this (Leslie C. Peltier):

*One gentle dose of starlight
To be taken each clear night
Just before retiring.”*

References

- Anon (1940)** Merry-go-round observatory. *Popular Science*, February 1940, Vol. 136, No. 2 p108-109.
- Anon (2023)** Leslie C. Peltier Award. The Astronomical League.
<https://www.astroleague.org/peltier-award/>
- Hurless, C. (1980)** Our friend, Leslie Peltier: A personal reminiscence. *The Journal of the American Association of Variable Star Observers*, vol. 9, no. 1, p. 32-34.
- Schmadel L. D. (2003)** *Dictionary of Minor Planet Names*, 5th rev. and enlarged edition, p326. Springer, ISBN-10: 3540002383.
- Swezey, Kenneth M. (1936)** Amateur stargazers help complete our picture of the universe. *Popular Science*, September 1936, Vol. 129, No. 3, p22-23.

A list of the comets discovered by Leslie Peltier is on the next page.

Comets discovered by Leslie C. Peltier

Designation	Name
C/1925 V1	Wilk-Peltier
C/1930 D1	Peltier-Schwassmann-Wachmann
C/1932 P1	Peltier-Whipple
C/1933 D1	Peltier
C/1936 K1	Peltier
C/1937 D1	Wilk*
C/1939 B1	Kozik-Peltier
C/1943 R1	Daimaca**
C/1943 W1	van Gent-Peltier-Daimaca
C/1945 W1	Friend-Peltier
C/1952 M1	Peltier
C/1954 M2	Kresak-Peltier

* Found by LP a few hours after Wilk

** Found by LP 16 days after Daimaca



*A Very Happy and Peaceful
Holiday Season to All*



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