

COMETS IN OLD CAPE RECORDS

by

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Author's Note

The first intensive search for records of comets in the Cape Archives was made by D. Moolin in 1858-1859. Moolin's interest had no doubt been roused by the blazing presence of Donati's comet, then in the Southern heavens. The last recorded observation of this comet was made on 1859 March 4 by Her Majesty's Astronomer, Thomas Maclear, observing from the Royal Observatory at the Cape of Good Hope; and to Maclear Moolin sent the results of his researches. They lay forgotten in the Observatory files for over forty years and were then discovered by R. T. A. Innes who sent them to the Royal Astronomical Society in London (*Monthly Notices*: LXII., 1902 September).

Moolin noted six entries in the official Journal:

1664 December 15.

1686 August 12.

1689 November 24 and 25; December 9 and 24.

Since Moolin's day there have been other searchers, conspicuous among whom are Theodore Mackenzie, F.R.A.S., a past President of the Astronomical Society of South Africa, and Miss M. K. Jeffreys, formerly of the Archives staff.

One border-line comet is omitted from these notes. In his *Vervolg van de Beschryving der Staarts Sterren* (Amsterdam: 1753), Nicolas Struyck records that "on 1748 April 24, a Dutch navigator at the Cape of Good Hope saw a comet at the beginning of Aries", but adds that it was "rendered invisible at the Cape by a Northerly motion". No mention of it has been traced in Cape records.

The bulk of the material in these notes is from a paper communicated to the Astronomical Society of South Africa over ten years ago.

D.M.

Cape Town.

1949 May 19.

Foreword

The last quarter of a century has seen the Archives of South Africa develop in every direction: an increased public interest in our national historical records and the use made of them by the scholar. It is admitted by all enlightened nations that a State owes a duty to its history, and that its public Archives should be made accessible to the *bona fide* student under certain restrictions. It is not enough to have records preserved as mere preservation will avail little if they are not used. In South Africa our Archives are being preserved and the number of researchers is increasing with the passing of years.

Researchers are frequently faced with the problem of finding a suitable medium of publication for the result of their searches. It happens occasionally that notes gathered after patient and long research are only partially used for some contribution to a literary or scientific society. They are then relegated to a drawer in the desk or are lost.

The student and the public generally will be grateful to Donald McIntyre for giving them the benefit of his searches for references to comets in the Cape Archives. He readily admits that "The bulk of the material in these notes is from a paper communicated to the Astronomical Society of South Africa over ten years ago". He has rescued his notes from that drawer and they are now a permanent record through this publication. His labour has not been lost to posterity. The notes can now be enjoyed by all who care to read. They will be a valuable contribution to the subject far beyond the bounds of Southern Africa.

Donald McIntyre is well known for his several contributions on astronomy and for one or two monographs on other subjects. He is also known for his great patience and meticulous care as a researcher. We owe him a debt of gratitude for making available the results of his labours.

C. GRAHAM BOTHA.

In de vroege ochtend tusschen 9 a 10 uijren sagde int Oosten
 sijn waerheit want hoofft vande reuier omtrent 80 graden bove
 des horisontes een vreemde star met een staert streckende
 de staert noortwaerts recht op de knie vande reuier ende
 't hoofft meest Zuilen omtrent 10 graden van aff.

een vreemde star
 met een staert

JAN VAN RIEBEECK'S COMET OF 1652

This reads:
 een vreemde star
 met een staert.

Savonts omtrent tusschen 9 a 10 uijren sagen in 't O. Z. Oosten suijswaerts van 't hoofft van den revier omtrent
 80 graden bove den horisont een vreemde star met een staert streckende de staert noortwaerts recht op de
 knie van den reuijs ende 't hoofft meest Zuilen omtrent 10 graden van aff.

Comets in old Cape Records

Early astronomical observations made at the Cape were concerned mainly with latitude and longitude—particularly longitude. These were vital to navigation. Though the old Cape Commanders welcomed visiting astronomers, they were certainly puzzled by their activities and found little to record in the official Journal. A conspicuous comet was different. It was awe-inspiring. It lent itself to description.

Mention of the following comets has been traced in the Government Archives:

The comet of 1652.
The comet of 1664.
Halley's Comet (1682).
The comet of 1686.
The comet of 1689.
The comet of 1695.
Comets of the years 1733 and 1742.

The relevant extracts follow. Cape records of a comet of 1830 will also be discussed.

THE COMET OF 1652

Jan van Riebeeck, first of the Cape Commanders, landed in Table Bay on 1652 April 6. Eight months later, on 1652 December 17, he wrote in his Journal:

At night about 9 or 10 o'clock saw to the East South East, southward from the head of the giant, about 80 degrees above the horizon a strange star with a tail; the tail extending northwards right on the knees of the giant and the head mostly to the South about 10 degrees away. [The "giant" was Orion.]

Further entries are:

1652 Dec. 18. Saw the comet on the same spot.

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1652 Dec. 20. Saw the comet in the N.E. northerly from the belt of the giant, about 60 degrees above the horizon.

1652 Dec. 21. Saw the comet this evening towards the N.E. like yesterday.

1652 Dec. 24. Saw at night the comet again—it has travelled to the N.N.W. of us about 50 degrees above the horizon, its tail which is now less bright than formally pointing to the E.S.E.—its signification is known to the Lord.

This is the last of the 1652 entries. It is possible that Van Riebeeck observed this comet through a telescope, but of this there is no record. The earliest mention of a telescope I have found in the Archives is 1666 Aug. 27 and the observation is not astronomical. On that day Commander Zacharias Wagenaar recorded in the Journal:

A ship in sight. With the help of a telescope (kijcker) we concluded that she carried a blue French flag.

At any rate Van Riebeeck's is the earliest known observation of the comet of 1652. The first European observation recorded is three days after Van Riebeeck's and is attributed to Hevelius. Hevelius attentively observed this comet. He says that it was of a pale and livid colour, and almost equal to the moon in size. He also notes a double nucleus. This double nucleus may account for Van Riebeeck's otherwise strange remark that the comet's head extended "*mostly*" to the South.

THE COMET OF 1664.

The comet of 1664 bulks inordinately large in the Archives. When the history of liquor control in South Africa is fully written this comet will be found to occupy an extraordinary place there too. The first note of it is in the Journal for 1664 Dec. 15. On that day Commander Zacharias Wagenaar, Van Riebeeck's immediate successor, wrote:

About midnight, with a sky partially clouded, we all here saw a star with a darkish ray or tail, which it is said showed itself much more clearly and distinctly about 3 o'clock when it was near day; the star rose in the East and the tail pointed directly North.

This comet is next mentioned in a Placcaat or proclamation issued on 1665 Jan. 17. This proclamation is briefly mentioned in the Journal of that date, but it is so unique a document in South African history that a free translation of the whole of it is appended:

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PLACCAAT OF 1665 JAN. 17.

WHEREAS we have with grief become increasingly aware that many of the Company's servants residing in this fortress, particularly the soldiers, sailors and labourers, have so often, despite the prohibition, not hesitated on Sundays to go out early without permission to the interior or to the forests and there to pass the day in the inns drinking themselves into a state of intoxication, playing games of chance, and indulging in all sorts of irregularities—whereby we not only miss all those who do not come here because they are occupied thus all day and sometimes all night and are not only invisible but also by such goings out (the which are to be much regretted) scandalously desecrate the day of the Lord, bringing to contempt the Lord's service and bringing upon others great trouble:

WHEREFORE now, in order so far as possible to do away with the uncontrolled and godless living and to keep everyone the better to his duty which is to protect this castle day and night truly and faithfully (especially at this time when we are threatened with an enemy attack and a destructive war), and also to bring about that every Sunday, at the place where we dedicate our humble services to God, those now absenting themselves shall suitably appear, and thus together offer up their prayers to the great and jealous God, praying that He may ward off the punishment that hangs over our heads, of which we are warned by the long-rayed star—a terrible sign of vengeance which threatens us nightly from the heavens—that He may mercifully turn it away from us. Thus it is that, for the above weighty reasons, we hereby interdict and forbid anyone, whosoever he may be, residing here, or belonging to the garrison, to go out early on Sundays, and even more so on Saturday evenings, with the intention of remaining out for the night without permission, either outside in the country or near the fort in a tap or elsewhere nor shall anyone play games of chance either before or during the sermon; but all shall be obliged to assemble at the ramparts of the castle, with their side-arms, for the roll call at the second church bell; and when each has answered his name and has entered the fort the third bell will ring and all shall assemble in the great hall for the reading of God's word—on the penalty that if anyone is unwilling, neglectful or careless in this matter, on the first offence the ration of brandy or arak will be stopped for a period of 8 days, on the second offence for 17 days and on the third offence for a whole month, and in addition every such law-breaker or real Sabbath breaker will be imprisoned in a dark dungeon for one day without food or drink, or else punished with an even more severe sentence. In addition, those who have permission to conduct a tap either at the fort or outside must see to it that on Sundays or other holy days nobody is given drink (wine, beer or brandy) before or during the service, whether he be a burgher or a servant of the Company; nor shall gaming be permitted; on the penalty that every tap owner caught contravening this regulation will be compelled to close down his tap for six weeks in addition to the fine which applies.

That our orders may be followed and carried out, the Fiscal and Ensign (Vaandrig) of this garrison have been ordered—the first to be responsible and the second to read every Sunday the roll call in the presence of all the foremen (werkassen), and those who are then found absent shall be brought to the Commander, or to whomever he may appoint, after the close of the service.

To understand what followed, a brief historical digression is necessary. For thirteen years after its foundation in 1652, the settlement in Table Valley

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was considered too small to warrant the ministrations of a resident clergyman. A form of service was read on Sundays and special occasions by an official known as the "Sick Comforter".

In 1663 one Ernestus Back was appointed to this office. He was a man addicted to intemperance and loose living. He was repeatedly suspended, "but," says Theal, "punishment and disgrace seemed only to harden him". Early in February 1665 Back was drunker and the comet more brightly menacing than ever. So the Commander and his Council decided to take action. They wrote the following despatch to the Batavian authorities:

DESPATCH OF THE CAPE COUNCIL TO GOVERNOR-GENERAL JOAN MAETSUIKER AND THE COUNCILLORS OF INDIA, OF DATE 7TH FEBRUARY, 1665.

We have already told your Honours that in the place of the late Sick Comforter Pieter van der Stael, one Ernestus Back of Amsterdam, also a Sick Comforter, came here in 1663, and later fell into a state of drunkenness and licentious living. On a certain Sunday, in full congregation, while he was conducting Communion Service, he was found to be so drunk that, many of his congregation were ashamed and distressed; and although we have threatened him frequently and severely with one and another punishment, and thus endeavoured to draw him away from his evil ways, he has ignored all our pleas, and has even gone in the company of youths, shouting and playing tricks, sometimes even fighting. He has gradually become so bad that it has become unbearable to see and hear daily the name of the All Highest preached, scandalously and blasphemously, in the midst of this wild and uncivilised congregation by so wild and incorrigible a person, more particularly as God has given us warning of His righteous punishment for our wild and sinful lives by sending a terrible comet into the heavens as a sign that we rid ourselves of this worthless minister. Wherefore we are despatching him and his family with this ship. Although we spoke to him upon this matter—in spite of all our warning to him to lead a better life, he actually absented himself from evening prayers and came aboard quite drunk: wherefor you can deduct with every justification the cost of his keep on the ship—or at least some of it. But for the sake of his wife who joined him lately with a dear little daughter and who seems to be very sad, we would like you to allow him the full amount according to his position. We hope that in future he will appreciate this and in future lead a better life. In the meantime the Fiscal will take the services until such time as another more pious person shall be provided.

Back sailed for Batavia either on the *Calff* or the *Poelsnip*, both of which left early on the morning of the 9th February with a South-West breeze. If he was a passenger on the *Calff* he would have had an unchancy passage for the cook of that vessel was left ashore sick and died early on Sunday morning, February 15.

From these happenings it might be thought that Commander Wagenaar was an excitable and unbalanced individual. Quite the contrary. According to the

historians he was an elderly man of grave demeanour, dull, impassive, adverse to exertion; a man who never allowed a passion to disturb him. His proclamation and the deportation of Ernestus Back were merely in the spirit of the times. Not long after his departure from the Cape, on the appearance of a later comet, a proclamation almost identical in import and detail with the Placcaat of 1665 Jan. 17, was promulgated in a town in Switzerland.

Nor was the Cape the only place where the comet of 1664 created consternation. De Foe, in his "Journal of the Plague Year", tells how this comet passed directly over London and so very near the houses that it was plain that it imported something peculiar to the city alone. He says that it was of a faint, dull, languid colour, that its motion was very heavy, solemn and slow, and that accordingly it foretold "a heavy judgment, slow but severe, terrible and frightful, as was the Plague". Indeed, for many generations the comet of 1664 was regarded as the harbinger of that historic pestilence.

But to the astronomer of to-day this comet is chiefly interesting because in 1665 Borelli expressed the idea that its orbit was parabolic. At the time, of course, such an idea was quite new.

THE COMET OF 1682—HALLEY'S COMET.

When Halley's Comet was being eagerly awaited about 40 years ago, an intensive search was made in the Cape Archives for records of earlier appearances. Among other searchers was Mr. G. H. Wilson of the *Cape Times*, who wrote a very full article for the issue of that newspaper, dated 1910 January 4. So far as I have been able to trace, no references to Halley's Comet, other than those discovered by Mr. Wilson, exist in the Archives.

These references gain an added interest when it is remembered that the great Simon van der Stel was responsible for their entry.

Halley's Comet was first sighted in 1682, on the evening of August 15 by Flamsteed's assistant at the Royal Observatory, Greenwich. It was first observed at the Cape on September 8. The entry in the Journal reads:

Between 6 and 7 in the evening a comet was seen to the W.N.W. about 6 degrees above the horizon. The tail pointed to the East, and was not so large as the comet seen in Holland in

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1680 and the beginning of 1681 which had the tail pointing upwards, but the star itself is brighter and larger.

Two days later, on September 10, it is interesting to recall, an observation of the comet was made by Halley himself. The next entry in Van de Stel's Journal is:

1682 Sept. 14. The comet is still showing itself as before, only a little brighter than when first seen.

Further entries are:

1682 Sept. 19. The star with a tail, of which nothing has been written for some time, shows itself now much brighter than before.

1682 Sept. 24. We have noticed that the comet is showing itself lower more and more. In conjunction with the appearance of the comet there have been heavy rains and an insect pest has destroyed the crops. What will happen when the comet has sunk right down God Almighty alone can tell.

Close scrutiny of the records failed to reveal any mention of Halley's Comet's return in 1759.

The return in 1835 is beyond the scope of these notes. But one or two items may be noted. Some most outstanding drawings of the comet on this approach were made at the Royal Observatory of the Cape of Good Hope. Even more interesting to South African astronomers is the fact that the very last observations of the comet at this apparation were made by Sir John Herschel from his station at Claremont, Cape, in May, 1836. Sir John Herschel's little refractor may thus be said to have said goodbye to Halley's Comet in 1836. It may also be said to have welcomed the comet back 73 years later; for it was the guiding telescope to the larger instrument at the Helwan Observatory, near the famous pyramids of Sakkara, with which the comet was first photographed on 1909 Aug. 24 upon the occasion of its last return.

THE COMET OF 1686.

The comet of 1686 was reported to have been seen from India and the East Indies in August of that year. No exact date of discovery is given in Chambers' Catalogue. The reference in the Journal is dated August 12. It reads:

1686 August 12. This night appeared in the fifth house of the heavens, at 1 o'clock, in the horizon a comet corresponding in length with Saturn and Venus conjoined, on the left

Maandag 12. Dese nacht is mt 5. Bemels Bijn's ten
 den iijer op den Borisont versegmen den
 Commet in langte geconjunct met
 Saturnus en Venus staande in de linker
 Schouder van den Jaab op 18gra 4m. Sij-
 der breedte en Orgraden 2. m. langste -
 dwars staart teght oost en west staete -
 Zijnde 35. Bemelse graden lang in gemin
 Smorgens de wind noor N. O. met sonneschyn
 en aangenaam weder t welcke favoriseerde
 de desseijnen van den E. B. de commandeur
 tot t besigtigen der omleggende landtyden
 en t verhoeden van de schade waermede
 d. E. Comp en d' Ingezetenen door den
 wind

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shoulder of the Hare: South Latitude 18 degrees 4 minutes, and 80 degrees 8 minutes Longitude. The tail extended right East and West to the length of 35 Celestial Degrees, in Gemini.

The comet was not observed in Europe until September.

THE COMET OF 1689.

The following entries occur in the Journal during 1689:

1689 Nov. 24. A star with a tail was seen in the South East.

1689 Nov. 25. This morning about 4 o'clock the said tailed star was again seen, which soon after disappeared as the sun rose.

1689 Dec. 9. This morning at 3 o'clock the tailed star was again seen very clearly. The tail was more than 4 degrees long.

1689 Dec. 24. The tailed star no longer seen.

Obviously, from earlier entries, this last observation will have been made in the morning.

The comet of 1689 is generally described as a magnificent object with a tail like "a great sabre" nearly 100 degrees long. Its discovery is generally attributed to Father Richaud at Pondicherry, and the date of its discovery is given as 1689 Dec. 10. It seems safe to assume, therefore, that the comet did not develop its enormous tail until after it had passed perihilion (on Nov. 29) and entered the evening skies. Van der Stel's observations of the comet would then have been made before it had become conspicuous and when it was still in the morning skies—a very meritorious performance.

THE COMET OF 1695.

Only one entry of this comet has been traced in the Journal. It reads:

1695 October 30. In the early morning of the 30 October (as we were told) at about 4 o'clock, a comet was seen for the first time in the South East of the heavens.

The comet of 1695 was observed only in the Southern Hemisphere. Most of the observations, imperfectly made, were by sailors. The elements were calculated by Burckhardt, upon manuscript observations preserved in the Depot de la Marine at Paris.

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THE COMET OF 1733.

The records of this comet in the Journal are:

1733 May 18. . . . and further there was seen by some people this evening a great star with a tail in the Western heavens.

1733 May 19. The tailed star was seen from the said boat before its arrival here. (Vessel arrived from Holland on May 19.)

1733 May 20. We ascertained from the Captain of this boat (vessel from India) that while becalmed upon the Agulhus Bank he saw the beforementioned tailed star.

A few records of this comet have been found in old Dutch shipping documents. It was not observed in Europe. Owing to lack of data it was not possible to compute elements.

THE COMET OF 1742.

Chambers' Catalogue states that this comet was first seen at the Cape of Good Hope on 1742 Feb. 5. It was actually seen before that date. The entry in the Journal reads:

1742 Feb. 5. During last, and also on several previous nights, a star with a tail has been seen from here rising in the East.

This comet is of interest to South African astronomers because its elements were computed by the Abbe de la Caille, who in 1751 set up an observatory at the lower end of Strand Street. This comet made a close approach to the earth, passing it within 331 terrestrial semi-diameters.

The entry of 1742 Feb. 5 is the last about comets traced in the Archives. This does not mean that there are not others. But careful search was made without success for mention of the comets of the years 1661, 1666, 1680, 1729, 1744, 1759 (Halley), 1759 (ii), 1759 (iii), and 1769. Possibly some of these comets travelled along paths too far North for observation from the Cape. Weather conditions may also have been unfavourable; for instance, the Journal mentions cloudy skies around the time when the comet of 1661 might have been visible.

Thos Maclear

1836 (a) Comet } 1836
 } No 20 }

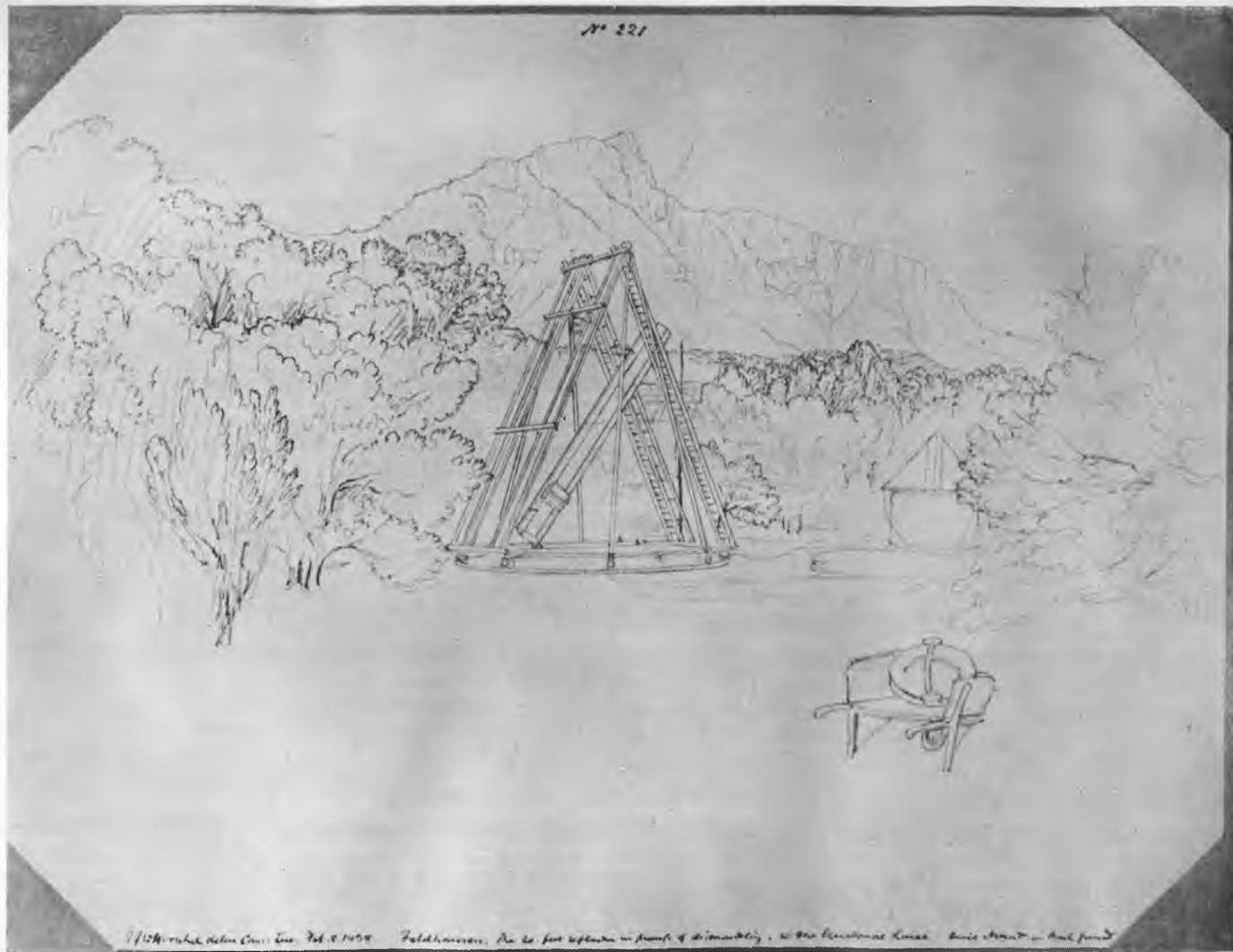
My Dear Sir

Can you give me the P.D. i
of the stars i. ii. iii, iv, ... &c
of my list (I mean the orange
as sent by me) for I have
mislaid my copy of the list
& cannot tell which is which
for want of it.

Comet in 20 feet had a
small * within 40" of Nucleus
but when Nucleus was gone further
* was not materially brighter
than ~~it~~ ^{it}.

LETTER FROM SIR JOHN HERSCHEL TO MR (AFTERWARDS) SIR THOMAS MACLEAR ABOUT HALLEY'S COMET

The first paragraph asks for the position of the stars observed near the comet; the second is a first account of Herschel's much-quoted observation of a small star seen through the comet's head. The writing at the top is a filing reference added much later.



SIR JOHN HERSCHEL'S "20-FOOT TELESCOPE IN PROCESS OF DISMANTLING AND EQUATORIAL HOUSE WITH THE DEVIL'S MOUNTAIN IN THE BACKGROUND." FELDHAUSEN, CLAREMONT, 1838

Sir John's last observation of Halley's Comet on 1836 May 5 was made with the refractor in the equatorial house.

Pencil sketch by Sir John Herschel

To these notes I should like to add a postscript on

MR. FARAGUET OF PORT LOUIS COLLEGE, MAURITIUS, AND THE
COMET OF 1830.

Mr. Faraguet's christian name (or even a prefatory initial) I have been unable to trace. What I know of him has been gleaned from several rare old publications in the South African Public Library.

Faraguet was a member of the expedition which sailed in the frigate *Astrolabe* from Toulon on 1826 April 25. The expedition was for exploration and scientific investigation. It was commanded by a famous French navigator Captain (afterwards Admiral) Dumont D'Urville. The *Astrolabe* cruised the South Atlantic, coasted the Australian coast from King George's Sound to Port Jackson, mapped various parts of New Zealand, and visited the Fiji Islands, the Loyalty Islands, New Caledonia, New Guinea, Amboyna, Van Dieman's Land, the Caroline Islands, Celebes and Mauritius. While the *Astrolabe* was at Tongatabu, the largest of the Friendly Islands, Faraguet was captured and carried off by the natives. He was subsequently rescued, and when the *Astrolabe* arrived at Mauritius elected to remain there.

Faraguet must have been very young. He is described in one place as a "youth" and in another as "a pupil of the Polytechnic School of Paris". Despite his youth, he appears to have been a scientist of parts.

In the Report of the Natural History Society of Mauritius (August, 1830) we read of

Mr. Faraguet . . . whose residence on the Island, since the departue of the *Astrolabe*, has enabled the Royal College (of Port Louis) to attain the establishment of a Physical Class.

Faraguet early became an active member of the Natural History Society of Mauritius. On 1830, the Proceedings say, he "exhibited a map of Tongataboo where he, in his visit in the *Astrolabe*, nearly fell a victim to the perfidy of the inhabitants; he being the youth who was carried off by them."

In May 1831 he explained to the Society a "table constructed by him to represent geometrically the law of variation of temperature in the sea at different



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