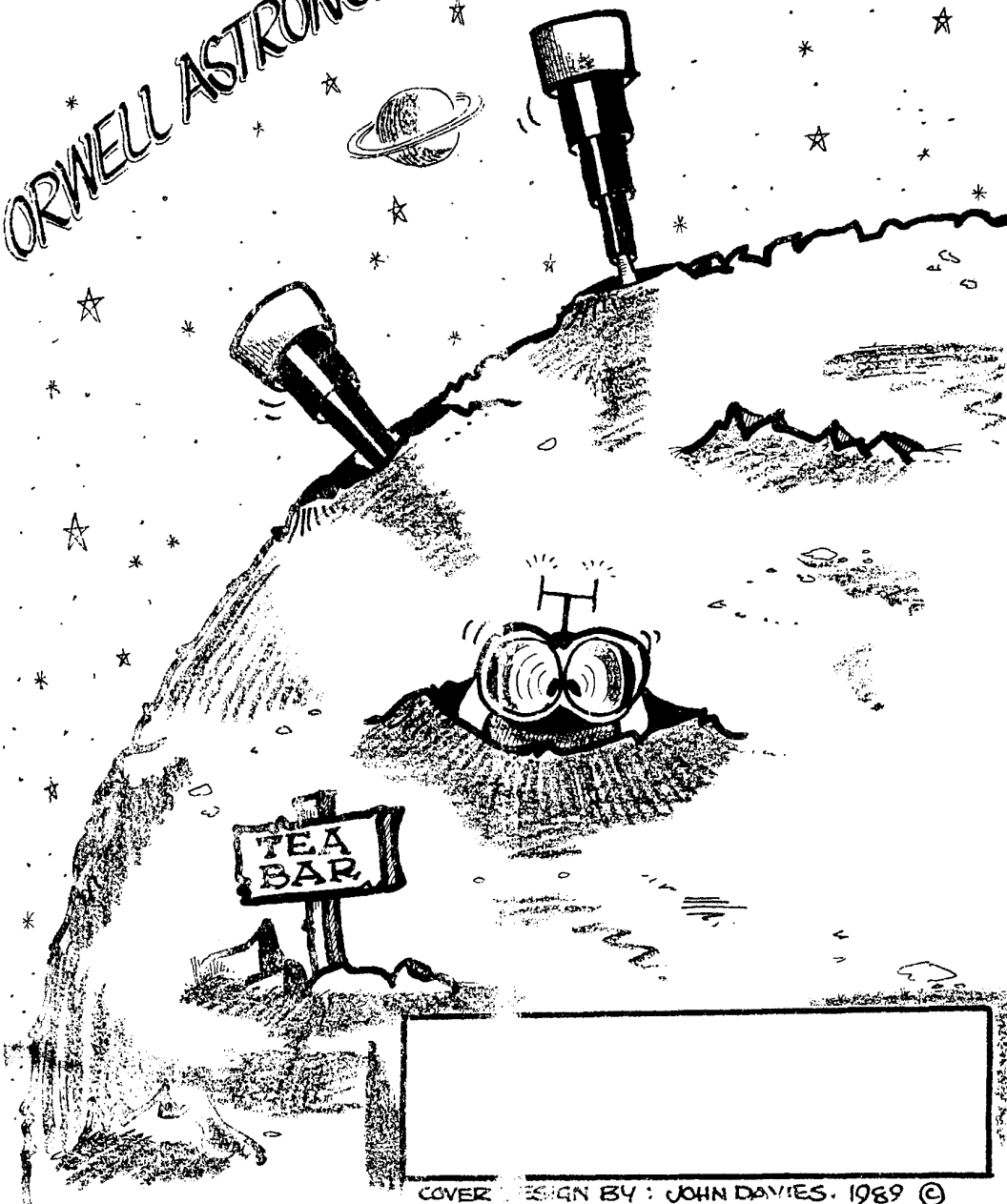


JULY 1990

ORWELL ASTRONOMICAL SOCIETY IPSWICH



COVER DESIGN BY : JOHN DAVIES. 1989 ©

NIGHT SKY

All times

GMT

SUN

Rises approximately 03.50

Sets approximately 20.20

MOON



8th



15th



22nd



29th

MERCURY Mercury is at superior conjunction on the 2nd. It will be moving into the evening sky, but dur to twilight it will be difficult to see.

VENUS Venus will remain visible low down in the early morning sky. By mid month it will be rising at about 02.00. Mag. -3.8

MARS Mars will rising before midnight in mid month. Mag. 0.1

JUPITER Jupiter will be inconjunction with the sun on the 15th. It will not be visible this month.

SATURN Saturn will be at opposition on the 14th. It will be rising at about 21.00 in mid month. Mag. 0.1

URANUS Uranus is visible all night, if you know where to look. This month it is approximately at R.A 18h 30m and Dec. -23.5°. Mag. 5.6

NEPTUNE Neptune is at opposition on the 5th. Mag. 7.7

SOCIETY NEWS

COMMITTEE MEETING

The next committee meeting will be Saturday 7th July at the observatory, starting at 19.30. As usual this will be an open meeting and any member may attend if they wish.

By J. Walsh.

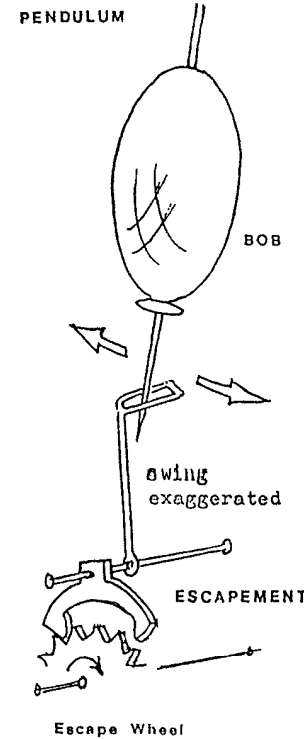
Since Halley's Comets rather poor display in 1986 we have had no more bright comets since. Then earlier this year we had the promise of Comet Austin, but this too was a disappointment. It is an unfortunate fact that Comets are not very reliable.

The word Comet comes from the Latin Conglomerare meaning to conglomerate or to form a ball or mass which is exactly what a Comet is, a ball of rocks and ice moving on a never ending journey through our Solar System. Depending on how big the orbit is, short term Comets like Encke will only take just over three years to return. While others, like Halley's, due to their much larger orbits will take seventy six years to return. Some Comets we will only see once, sometimes a Comet will get too near one of the giant planets like Jupiter for instance, this could cause the comet's orbital path to alter, it then gets too near the Sun and is destroyed. Sometimes when the orbital path is altered the Comet is "Flicked" away by the gravity of the Sun and out of our Solar System altogether.

A Comet is made up of three parts. First we have the Nucleus, this is generally made up of rock and ice, secondly, the Coma, this is the most prominent part of the Comet and is made from Iron, Nickel and Magnesium. The Ice can be made from Water, Ammonia and Methane. Last comes the Tail, these can come in two kinds, made from either dust or gas, some Comets have two tails one of each kind. Gas tails tend to be straight, but dust are curved.

As the Comet nears the Sun, the Solar Wind starts to interact with the tiny particles within the Comet and the Tail forms. As the Comet draws away from the Sun the Tail always facing away from the Sun, assumes the lead, so the Comet has the appearance of travelling backwards.

Comets are always interesting things to look out for, most of the time they look like a blur, but hopefully before long, we will get the opportunity of observing a very bright Comet. We can only wait and see.



These were made by the master clockmaker Thomas Tompion in 1675 for John Flamsteed first Astronomer Royal. They were two in number (in spite of the three faces we see in the old engraving), and had unique 13 foot long pendulums behind the walls (wainscoat) and above the actual mechanism. Each pendulum took two seconds to swing. The clocks had an accuracy of 10 seconds a day when they were working properly, astounding for the age in which they were made.

They needed winding only once a year.

The escapement which made these clocks so accurate was the ANCHOR escapement invented by Robert Hooke and developed to perfection by Tompion.

Flamsteed used these clocks to study the EQUATION OF TIME where the Earth's irregular orbit round the Sun during the year makes the Sun seem to cross our meridian up to 16 minutes early or 14 mins late at different times of the year, This is why we use MEAN (or average) time.

A reproduction of Tompion's 13 foot mechanism can be seen working in the Spencer Jones Gallery.

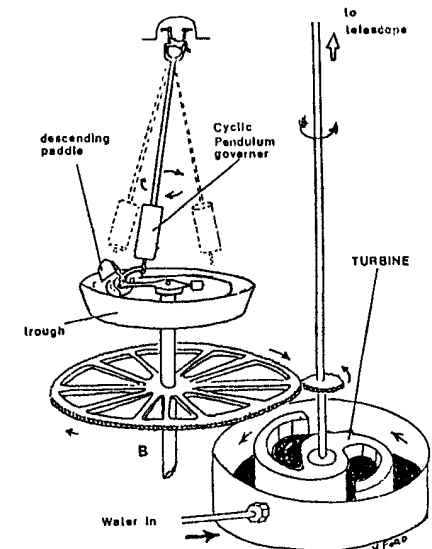
The original Water Turbine Drive

The water jet spins the horizontal turbine on the main drive shaft. The speed of the shaft was based on a calculation which took into account the water pressure available from the Kent Water Authority during the years of operation.

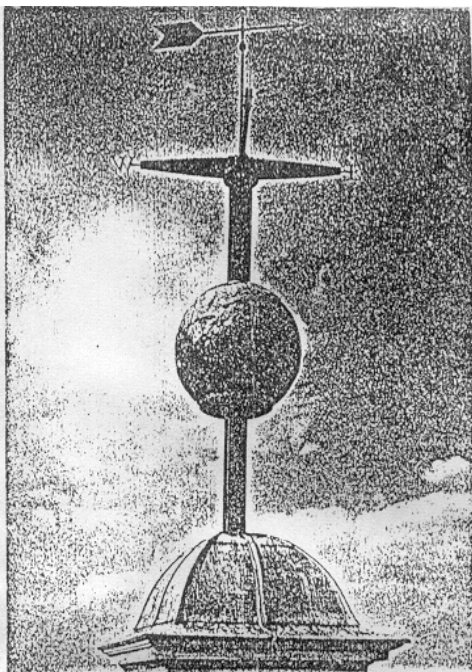
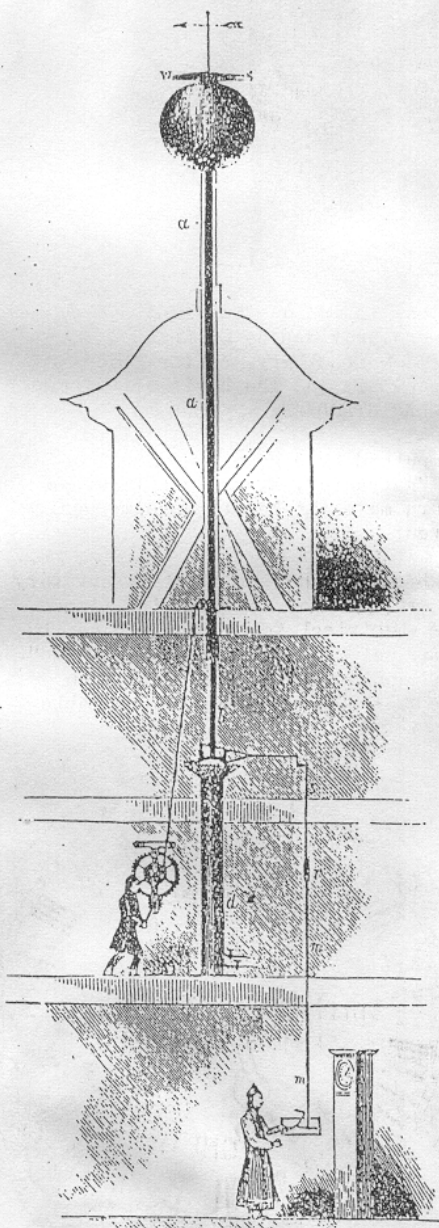
Movement was smoothed by a Mercury filled pendulum driven in a conical path by the large toothed wheel. The pendulum moved outwards as it spun, dipping the paddle into a circular oil trough.

Gearing on shaft B operated push rods which regulated the water flow to the turbine by means of float valves (not shown).

This drive unit is on display in the observatory shop.



THE TIME BALL



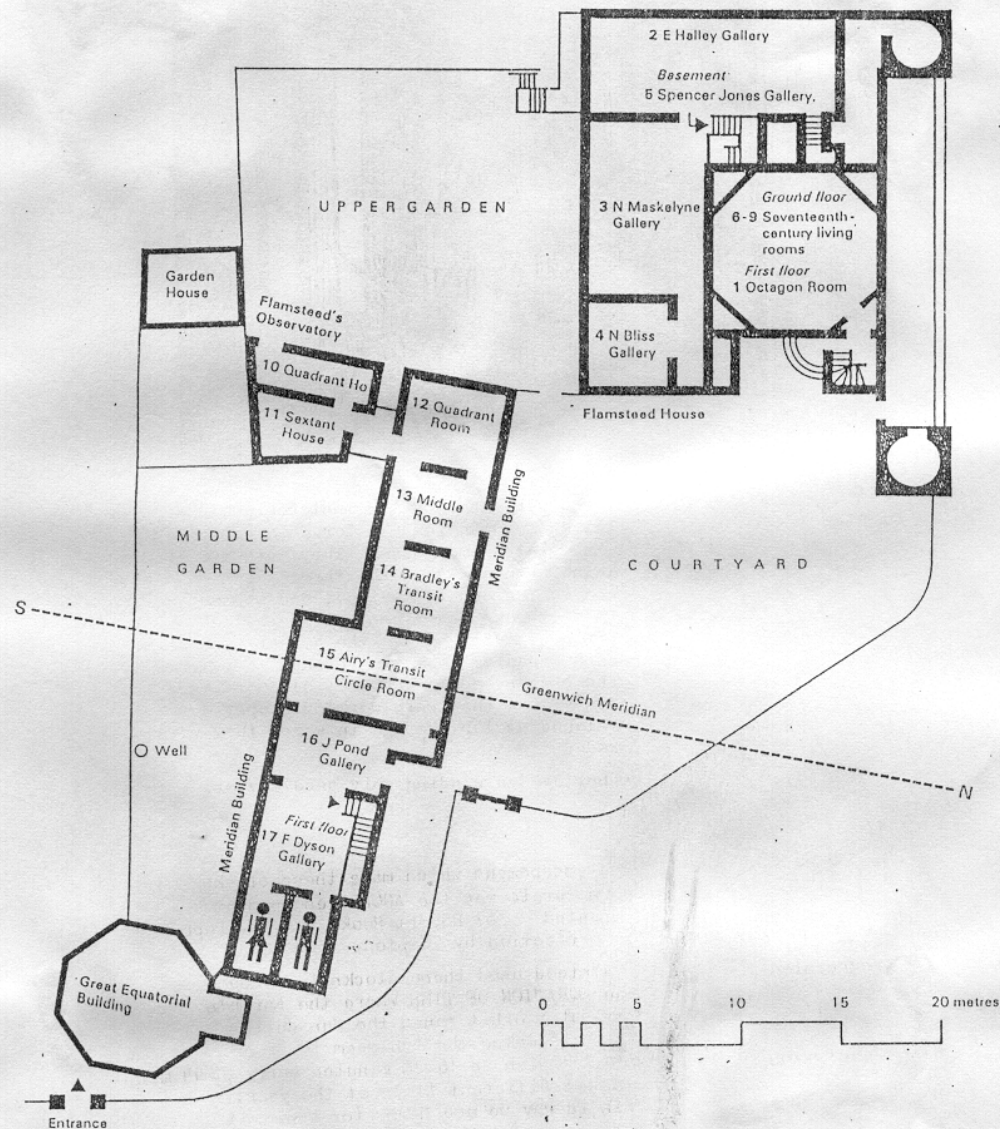
The TIME BALL .. was erected in 1833 during the tenure of John Pond as Astronomer Royal. Originally the ball was of leather, five foot (1.5 m.) diameter on a wooden frame, now it is of aluminium. The ball was raised by hand to the top of the mast by a winch near the external door. It was dropped manually (now electrically) precisely at one o' clock rather than twelve noon since the assistants would be more concerned with the checking of the clocks and the Sun's altitude at noon.

The ball is hoisted half way up the pole at five minutes to one as a preparatory signal, then up to the top at two minutes to the hour. An electric signal drops the ball at the hour.

The fall of the time ball is visible for many miles over London. For instance the chronometer makers of Clerkenwell could see it. Its main function however was for the setting of ships' chronometers on the river.

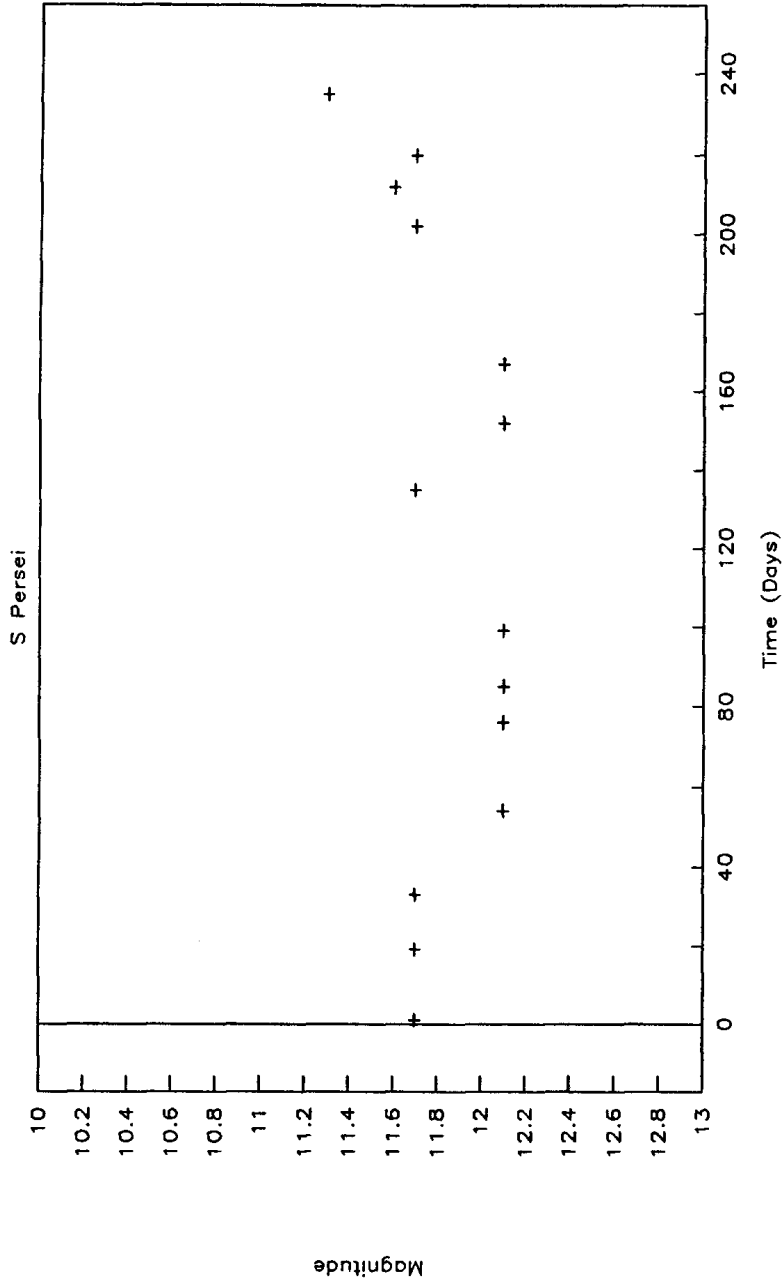
Time Balls can be seen at other locations, such as Deal and at Edinburgh. At one time all were controlled from Greenwich.

Astronomy Section, Old Royal Observatory
National Maritime Museum, London
SE109NF.



More next month if space is available.

Variable Star Observations



This light curve shows S Persei from August last year to March this year. It illustrates a fade in this very long period of about 800 days.

PROGRAMME FOR JULY

DAY	DIRECTORS	SECTION	PHONE No.s
Mondays from 8.00pm			
GENERAL OBSERVATION SECTION			
2-9-16	Mr R Newman	[Redacted], Felixstowe, IP11 9DY.	Tel. Fel. [Redacted]
23-13	Mr J King	[Redacted], Felixstowe, IP11 9LQ.	Tel. Fel. [Redacted]
Tuesdays from 8.00pm			
GENERAL OBSERVATION SECTION			
3-10-17	Mr R Newman	[Address above.]	Tel. Fel. [Redacted]
24-31	Mr J King	[Address above.]	Tel. Fel. [Redacted]
Wednesdays from 8.00pm			
NEBULA AND FAINT OBJECTS SECTION			
4-11-18	Mr M Cook	[Redacted], Ipswich, IP4 5PZ.	Tel. Ips. [Redacted]
25	Mr D Payne	[Redacted], Wickham Market, IP13 0SD.	Tel. W.M. [Redacted]
Fridays from 8.00pm			
PLANETARY AND LUNAR SECTION			
6-13-20	Mr P Richards	[Redacted], Ipswich, IP4 1QB.	Tel. Ips. [Redacted]
27	Mr R A Lobbett	[Redacted], Felixstowe, IP11 8UJ.	Tel. Fel. [Redacted]
	Mr G Marriott	[Redacted], Ipswich, IP4 4JB. [Assistant Director]	Tel. Ips. [Redacted]

All nights are open to all members, but, on nights other than Wednesdays, ring directors to confirm. Directors will also be able to tell you if a group visit is taking place. All sections observe anything of interest, but the title indicates the main specialism.

Lectures and other events :

COMMITTEE MEETING

The next committee meeting will be Saturday 7th July at the observatory starting at 19.30. As usual this will be an open meeting and any member may attend if they wish.

1990 COMMITTEE

CHAIRMAN	D Payne	[Address above.]	Home: [Redacted] Work: [Redacted]
VICE CHAIRMAN /VISITS CO-ORD	D Barnard	[Redacted], Ipswich, IP4 5PP.	Home: [Redacted] Work: [Redacted]
SECRETARY	R Gooding	[Redacted], Ipswich, IP1 6AE.	Home: [Redacted] Work: [Redacted]
TREASURER	M Nicholls	[Redacted], Capel St Mary, Ipswich, IP9 2EX.	Home: [Redacted] Work: [Redacted]
MAINTENANCE CO-ORD	M Cook	[Address above.]	Home: [Redacted] Work: [Redacted]
JOURNAL CO-ORD	E Sims	[Redacted], Ipswich, IP1 4HA.	Home: [Redacted]
LIBRARIAN	P Richards	[Address above.]	Home: [Redacted] Work: [Redacted]
EQUIPMENT CURATOR	J King	[Address above.]	Home: [Redacted]
SPECIAL EVENTS CO-ORD	A Smith	[Redacted], Ipswich, IP4 5RZ.	Home: [Redacted] Work: [Redacted]