COMETS

The date of perihelion (T), period (P), perihelion distance (q) and the magnitude parameters H and G are given for each comet which comes to perihelion in 2022 and which becomes brighter than magnitude 18 and for other comets which are expected to be brighter than 14th magnitude during the year. The table also gives the date that the comet is expected to be at its brightest, its declination, elongation and expected peak magnitude. A negative elongation indicates that the comet is best in the evening sky.

The magnitude parameters are taken from determinations by the Comet Section (as indicated by the row coloured in red) or from the elements download from the MPC. The predicted total magnitude is given by:

$$m_1 = H + 2.5\ G\ (\log_{10} r) + 5\ (\log_{10} \Delta)$$

where Δ is the distance of the comet from Earth and r is its distance from the Sun, both in astronomical units.

It is important to remember that comet magnitude predictions are often very uncertain and can be misleading, particularly for non-periodic comets with small perihelion distances. In particular, comets which show apparently bright magnitudes at very small elongations are unlikely to be observable. The table is derived from orbital elements downloaded from the Minor Planet Center (MPC) on 2021 July 31 and it is sorted in order of the date at which the comet reaches its brightest magnitude. A digital version containing more information is available from the Comet Section website at ***britastro.org/comet***. This website contains links to many other resources useful to the comet observer, such as the Comet Section Observing Guide which is available for download as a PDF.

There are no particularly bright comets expected in 2022. Comet **C/2017 K2 (PanSTARRS)** was discovered on 2017 May 21 when it was over 16 au from the Sun. It starts the year as a 12th magnitude object in Ophiuchus, still 4.4 au from the Sun, but it will brighten rapidly through the year as it heads for perihelion at 1.8 au from the Sun in 2022 December. The comet is reasonably placed for northern hemisphere observers through to mid-summer but it then dives south and the best views will be from the southern hemisphere towards the end of the year when it may reach 8th magnitude. A chart showing its position is on page 97.

A number of periodic comets come to perihelion in 2022 and should get bright enough to be visible in small telescopes or binoculars from dark sites. Early in the year **104P/Kowal** and **19P/Borelly** should each be around 9th magnitude in the evening sky and, towards the end of the year, **263P/Gibbs** could reach 8th magnitude although it will be a very diffuse object. Charts for 104P and 263P are available from the ***BAA comet website***, or you can generate your own charts using the *What's Observable* app here : ***https://britastro.org/computing/applets_ecliptic.html***.

29P/Schwassmann-Wachmann is a comet in a nearly circular orbit with a period of 14.8 years. The comet is at opposition on 2022 December 30 in Auriga. It is well north of the celestial equator which makes it a good target from northern latitudes and a chart showing its position is on page 98. It spends most of the time at around 16th magnitude but has frequent outbursts. It should be kept under observation as regularly as possible using the methods outlined on the Comet Section's ***Mission 29P*** page.

Charts produced using Megastar 4

COMETS

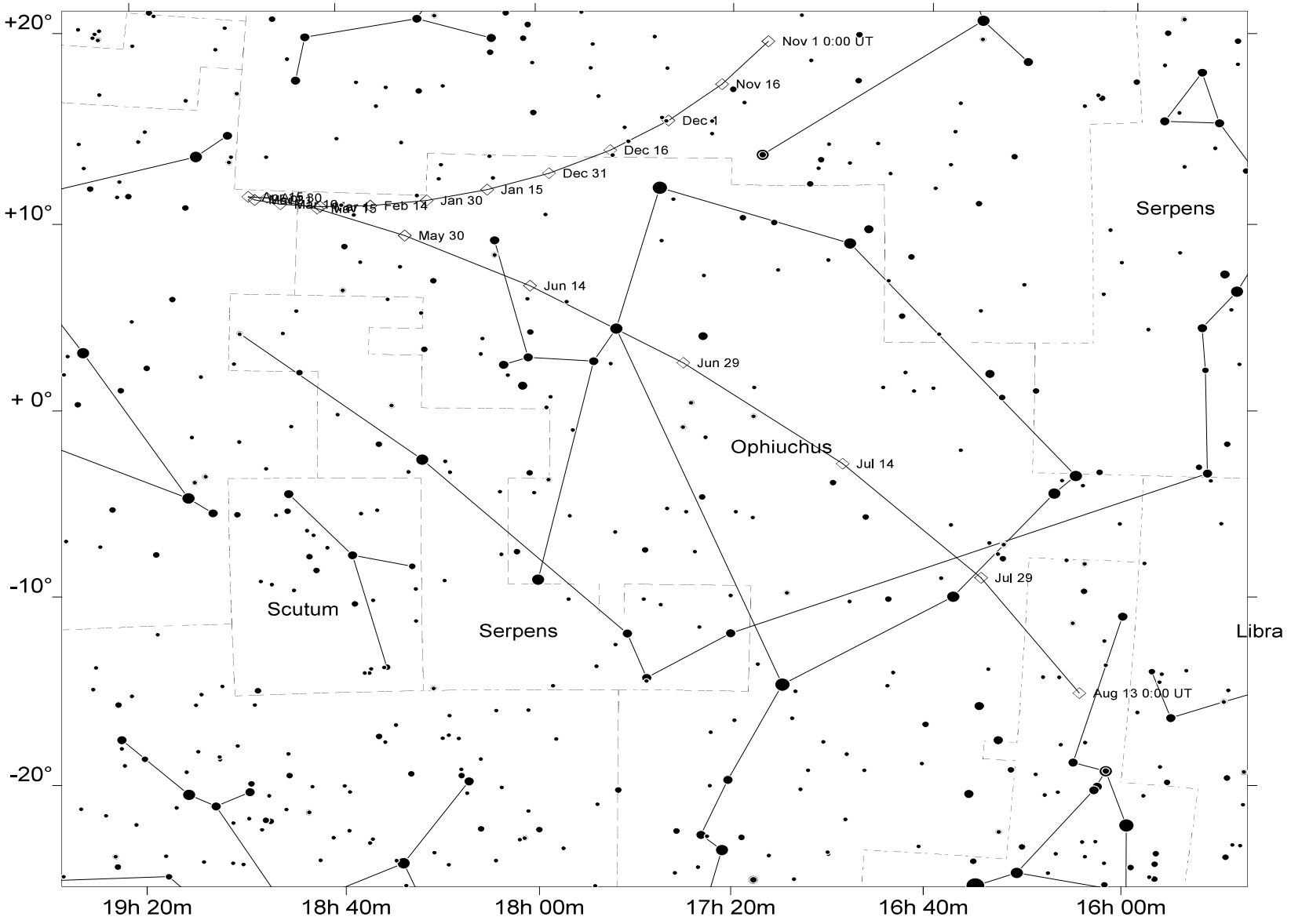
Name	T	q	P	H	G	Date of peak		Dec. at peak	Elong. at peak	Peak Magnitude
	yyyy–mm–dd	au	years			mm	dd	°	°	
C/2020 U4 (PANSTARRS)	2022-04-07	5.35		7.0	4.0	Jan.	1	31.2	–133	17.7
C/2021 A1 (Leonard)	2022-01-03	0.62		8.5	4.0		1	–35.4	–39	6.0
4P/Faye	2021-09-08	1.62	7.48	9.7	3.4		1	7.4	–164	12.2
8P/Tuttle	2021-08-27	1.03	13.64	7.9	4.2		1	–53.3	44	13.2
52P/Harrington-Abell	2021-10-05	1.78	7.60	6.6	8.1		1	–4.0	91	13.6
67P/Churyumov-Gerasimenko	2021-11-02	1.21	6.43	11.0	4.0		1	28.6	149	10.9
97P/Metcalf-Brewington	2022-02-15	2.57	10.39	4.6	6.0		1	–4.5	–97	12.6
246P/NEAT	2021-02-23	2.86	8.06	2.5	6.0		1	–28.4	–32	13.3
342P/SOHO	2021-10-19	0.05	5.31	9.0	4.0		1	–29.7	12	13.6
205P/Giacobini	2022-01-13	1.53	6.67	13.0	4.0		2	–12.6	–29	16.7
C/2019 L3 (ATLAS)	2022-01-09	3.55		4.5	4.0		7	31.8	–171	12.1
181P/Shoemaker-Levy	2022-01-08	1.16	7.62	11.5	4.0		8	–15.0	–47	13.2
C/2020 U5 (PANSTARRS)	2022-04-27	3.76		8.0	4.0		12	88.0	–110	16.5
104P/Kowal	2022-01-11	1.07	5.74	9.6	8.0		15	–1.3	–80	9.3
19P/Borrelly	2022-02-01	1.31	6.85	6.6	5.6		22	–3.0	–72	8.7
C/2021 D2 (ZTF)	2022-02-03	2.95		9.0	4.0	Feb.	7	86.7	–105	15.7
P/1997 B1 (Kobayashi)	2022-03-28	2.06	25.12	15.0	2.0		14	24.9	–159	16.9
230P/LINEAR	2022-03-19	1.57	6.42	13.0	4.0		27	–0.5	–45	16.6
9P/Tempel	2022-03-04	1.54	5.58	3.2	15.3	Mar.	15	–22.9	64	11.6
116P/Wild	2022-07-17	2.20	6.52	4.1	8.8		28	19.2	–130	13.1
319P/Catalina-McNaught	2022-03-31	1.19	6.74	15	4.0	Apr.	1	–11.2	31	17.2
22P/Kopff	2022-03-18	1.55	6.38	7.0	6.0		2	–13.6	50	11.4
C/2020 Y2 (ATLAS)	2022-06-17	3.13		6.5	4.0		5	–61.0	–96	13.9
C/2019 T4 (ATLAS)	2022-06-09	4.24		5.0	4.0		9	–19.7	–157	13.9
99P/Kowal	2022-04-12	4.71	15.10	4.5	6.0		14	–8.5	–179	17.4
45P/Honda-Mrkos-Pajdusakova	2022-04-25	0.56	5.33	12.1	6.0		26	15.0	–8	9.2
100P/Hartley	2022-08-10	2.02	6.36	8.9	6.0		29	29.6	–116	14.9
325P/Yang-Gao	2022-03-29	1.43	6.61	14.0	4.0		29	–16.5	92	15.8
135P/Shoemaker-Levy	2022-04-07	2.68	7.42	6.5	8.0	May	23	–16.6	170	16.2
C/2021 E3 (ZTF)	2022-06-11	1.78		8.5	4.0	Jun.	2	–80.0	106	11.4
86P/Wild	2022-02-07	2.26	6.84	8.5	6.0		20	–33.0	136	15.3
169P/NEAT	2022-07-09	0.60	4.20	16.0	2.0		29	20.1	33	15.4
117P/Helin-Roman-Alu	2022-07-07	3.04	8.25	0.3	9.1	Jul	3	–31.7	–171	12.8
C/2020 R7 (ATLAS)	2022-09-16	2.96		7.0	3.2		19	–59.7	–138	12.5
107P/Wilson-Harrington	2022-08-24	0.97	4.25	15.0	2.0		27	21.0	83	13.1
73P/Schwassmann-Wachmann	2022-08-25	0.97	5.44	11.5	6.0	Sep.	1	–18.2	–58	11.4
255P/Levy	2022-09-07	0.85	5.05	9.0	4.0		3	17.7	30	9.3
420P/Hill	2022-05-22	2.79	12.97	11.5	4.0		7	0.6	159	17.5
P/2011 Q3 (McNaught)	2022-08-19	2.32	11.08	13.5	4.0		9	–9.1	170	17.8
41P/Tuttle-Giacobini-Kresak	2022-09-13	1.05	5.42	11.0	10.4		14	1.0	–17	13.0
327P/Van Ness	2022-09-02	1.56	6.72	16.0	4.0		16	–8.6	142	17.0
44P/Reinmuth	2022-04-23	2.11	7.09	8.3	6.0		17	27.2	115	15.2
382P/Larson	2022-03-15	4.41	16.27	8.0	4.0		27	2.6	170	17.3
214P/LINEAR	2022-09-26	1.86	6.88	13.0	4.0	Oct.	4	–4.0	6	18.0
157P/Tritton	2022-09-09	1.57	6.69	10.0	4.0		11	17.2	62	13.3
61P/Shajn-Schaldach	2022-10-24	2.12	7.08	6.0	10.0		17	1.5	–172	14.5

2022 cont'd

Name	T	q	P	H	G	Date of peak		Dec. at peak	Elong. at peak	Peak Magnitude
	yyyy–mm–dd	au	years			mm	dd	°	°	
P/2007 S1 (Zhao)	2022-10-08	2.52	7.46	13.0	4.0		22	3.7	170	18.0
127P/Holt-Olmstead	2022-08-10	2.21	6.41	11.0	6.0		25	31.6	153	17.0
196P/Tichy	2022-10-29	2.17	7.41	13.5	4.0		28	20.0	173	17.2
179P/Jedicke	2022-05-29	4.12	14.46	2.5	8.0	Nov.	29	7.3	158	17.6
80P/Peters-Hartley	2022-12-08	1.61	8.07	8.5	6.0	Dec.	11	–27.7	11	13.7
244P/Scotti	2022-11-16	3.92	10.83	9.0	4.0		23	26.4	177	17.3
119P/Parker-Hartley	2022-08-11	2.33	7.45	9.0	3.2		27	21.5	157	13.2
C/2017 K2 (PANSTARRS)	2022-12-19	1.80		1.5	4.0		31	–64.7	42	6.0
C/2019 U5 (PANSTARRS)	2023-03-30	3.62		4.5	4.0		31	3.8	75	13.1
C/2020 K1 (PANSTARRS)	2023-05-09	3.07		5.5	4.0		31	–25.1	4	13.9
C/2020 V2 (ZTF)	2023-05-08	2.23		4.9	4.0		31	81.7	–117	10.7
71P/Clark	2023-01-21	1.59	5.56	10.5	2.4		31	–25.0	15	13.7
81P/Wild	2022-12-15	1.60	6.41	3.3	9.9		31	–12.4	60	9.7
113P/Spitaler	2022-06-01	2.14	7.11	12.5	2.0		31	12.0	132	16.0
118P/Shoemaker-Levy	2022-11-23	1.83	6.15	9.3	3.8		31	8.6	146	11.8
204P/LINEAR-NEAT	2022-11-16	1.84	6.81	14.0	4.0		31	14.6	129	17.0
211P/Hill	2022-10-04	2.33	6.68	12.5	4.0		31	15.0	108	17.7
237P/LINEAR	2023-05-14	1.99	6.58	4.2	8.0		31	–24.1	43	13.5
263P/Gibbs	2023-01-30	1.24	5.32	9.0	4.0		31	16.3	130	8.2

COMETS

C/2017 K2 (PANSTARRS)



29P/SCHWASSMANN-WACHMANN