

Tabulation of Comet Observations

This issue is devoted to the unexpected bright outburst of comet 17P/Holmes, beginning with Zdenek Sekanina's article and continuing with the observations presented here. We are making an exception to the new policy (instigated in Jan. 2007) of only summarizing the tabulated photometry: we will publish in the April 2008 issue all of the contributed tabulated photometry on comet 17P — both those summarized in the last couple of issues of the *ICQ* and those contributed more recently. Due to constraints on the size of a bound copy produced by our printer, the tabulated visual and CCD photometric data of 17P will appear in the April issue. While the descriptive information for the 17P observations that were made up to the end of Jan. 2008 appear in this issue, the descriptive information for 17P observations made from Feb. 2008 through April 2008 will be published in the April 2008 issue, as usual. The 17P tabulated data that are summarized beginning on page 49 of this issue are being posted immediately at the *ICQ* website, as is now the usual practice; they will retain the record of publication of this January issue (*ICQ* Whole No. 145) even though they will be printed in the April issue. Due to time constraints, those observations contributed on paper (which include some 17P data) will appear in the April issue, where 17P data only will continue to be published in full tabulated form. As this has been a remarkable apparition of a very noteworthy comet, there may be some considerable future value to a printed record of these data.

New magnitude reference tabulation codes: **HC** = photographic *R*-band magnitudes from Hubble Space Telescope Guide Star Catalogue; **ST** = list of star magnitudes compiled by Brian Skiff and posted at website URL <http://www.tass-survey.org/tass/refs/skiff.photom.tbl> (submitted by R. D. Schwartz, who presumed this to be a culled list of the brighter standards from Landolt's lists).

New CCD camera tabulation codes: **Nik** = Nikon D50 digital SLR camera; **STX** = SBIG ST8-XME.

New CCD-camera-chip tabulation code: **K6M** = KAF-1603ME (Kodak).

New tabulation code for computer software used for the photometric reduction of CCD images: **Mir** = Mira; **PHO** = PHOTOM software developed by a student of R. D. Schwartz at the University of Missouri at St. Louis to reduce aperture measurements, and Schwartz's own software program to produce magnitudes.

Descriptive Information, to complement the Tabulated Data (all times UT):

See the July 2001 issue (page 98) for explanations of the abbreviations used in the descriptive information.

◊ Comet 2P/Encke \Rightarrow 2007 Apr. 8.77, 13.78, and 14.78: *Guide 7.0* software used for comp.-star mags [SAN07].

◊ Comet 8P/Tuttle \Rightarrow 2007 Sept. 14.88: obs. from Alps in southern France (elev. 1400-2600 m) [BIV]. Nov. 2.47, 9.48, 18.72, 29.53, 29.59, Dec. 1.58, 5.48, 9.73, 17.67, 30.52, 2008 Jan. 1.45, 4.43, and 5.46: **Guide 8.0** software used for comp.-star mags [YOS02]. 2007 Nov. 2.47: *B-V* values of comp. stars were +0.46, +0.61, and +0.85 [YOS02]. Nov. 3.43: diffuse [YOS04]. Nov. 3.85: from dark mountain skies, the coma appears large and diffuse [GON05]. Nov. 9.48: *B-V* values of comp. stars were +0.57, +0.66, and +0.66 [YOS02]. Nov. 9.96: seen as a fairly large diffuse object of quite-low surface brightness; the comet was also detected on an unguided 30-sec image using a digital SLR camera (Canon 400D + 100-mm.-f.l. lens at $f/2$); dark sky [GRA04]. Nov. 11.44: comp. star has *B-V* = +0.56 [TSU02]. Nov. 11.44, 19.39, 23.46, Dec. 16.62, 30.52, and 2008 Jan. 4.49: **Guide 8.0** software used for comp.-star mags [TSU02]. 2007 Nov. 14.69, 22.45, Dec. 3.43, 4.44, 5.46, 7.47, 9.41, 14.55, 16.38, 18.47, 26.54, 30.49, 2008 Jan. 1.38, 2.44, 4.40, 6.42, 9.50, and 13.39: **StellaNavigator** ver. 8.1 software used for comp.-star mags [NAG08]. Nov. 14.69: *B-V* values of comp. stars were +0.59, +0.63, and +0.67 [NAG08]. Nov. 19.39: comp. star has *B-V* = +0.51 [TSU02]. Nov. 22.45: *B-V* values of comp. stars were +0.67, +0.74, and +0.75 [NAG08]. Nov. 23.46: comp. star has *B-V* = +0.49 [TSU02]. Nov. 28.77: very diffuse coma with a small, significantly brighter central cond. [KAM01]. Nov. 29.59: *B-V* values of comp. stars were +0.57, +0.60, and +0.70 [YOS02]. Nov. 29.90: "comet close to star of mag 10.0; coma dia. possibly underestimated" [SCH04]. Nov. 30.00-2008 Jan. 11.99: comp.-star mags are V_T values from *Guide 8.0* software (Project Pluto, 168 Ridge Rd., Bowdoinham, ME) [BOR].

Dec. 2.86: comet also weakly visible w/ 15 \times 80 B [SCH04]. Dec. 3.85: faint and large outer halo [MEY]. Dec. 3.85 and 7.81: ill-defined coma [MEY]. Dec. 4.02: diffuse, ill-defined coma of low surface brightness [GRA04]. Dec. 5.46: *B-V* values of comp. stars were +0.67, +0.70, and +0.84 [NAG08]. Dec. 5.49, 9.46, 17.46, 26.39, 30.45, 31.39, 2008 Jan. 2.41, 4.39, 8.46, and 15.46: **Guide 8.0** software used for comp.-star mags [MIY01]. 2007 Dec. 5.53, 7.67, 9.59, 13.55, 16.58, 17.61, 30.41, 31.41, 2008 Jan. 1.52, 3.42, 4.48, and 6.39: **The Sky** ver. 5 software used for comp.-star mags [MIT]. 2007 Dec. 5.64, 9.80, 26.44, Jan. 6.59, and 9.59: **Guide 8.0** software used for comp.-star mags [NAG04]. Dec. 7.47: *B-V* values of comp. stars were +0.65, +0.68, +0.82, and +0.90 [NAG08]. Dec. 8-10: site of the IRAM telescope at Pico-Veleta, southern Spain [BIV]. Dec. 8.12: comet very close to stars of mag 11 and 12 [COM]. Dec. 8.45 and 9.45: the comet's appearance has completely changed in one month; diffuse, but moderately condensed in the center; bright and large through a small monocular [YOS04]. Dec. 8.78: found first with 25 \times 100 B (which showed a pseudo-nucleus of mag 11), then seen w/ Canon IS 18 \times 50 B, and finally w/ handheld 7 \times 50 B [KAR02]. Dec. 8.93: light pollution [HOR03]. Dec. 9.73: w/ 9 \times 63 B, surprisingly large, medium-condensed coma [KAM01]. Dec. 9.73: *B-V* values of comp. stars were +0.34, +0.60, and +0.60 [YOS02]. Dec. 10.93: comet close to star of mag 8.3 [SCH04]. Dec. 11.70: w/ 10 \times 50 B, comet appeared faint and showed a diffuse, extended coma (surface brightness similar to M33, although the latter object was considerably larger in angular extent) [GRA04]. Dec. 17.88: faint in 7 \times 50 B, but easily seen through the larger

instrument; the surface brightness of 8P was markedly higher than M33; quite favorable conditions despite first-quarter Moon [GRA04]. Dec. 18.47: $B-V$ values of comp. stars were +0.56, +0.63, and +0.68 [NAG08]. Dec. 19.22: w/ 7×50 B, easily visible and comparable to M81 in appearance; comet showed a considerably higher surface brightness than 17P; dark sky [GRA04]. Dec. 22.76: strong moonlight and slightly hazy sky, but comet well visible near zenith [BOU]. Dec. 25.70: well visible despite an almost-full Moon low in E sky [GRA04]. Dec. 28.13: comet seen w/o difficulty despite a quite-low alt. and moonlight [GRA04]. Dec. 28.72: w/ 32-cm $f/5$ L ($45\times$), coma dia. $10'$, $DC = 6$ [PIL01]. Dec. 28.76: “comet close to star of mag 7.0; underestimation?” [SCH04]. Dec. 28.77: w/ 9×63 B, rather diffuse; however, towards the center, coma is significantly condensed [KAM01]. Dec. 28.85: moonlight [GON06]. Dec. 28.97: comp. stars have $V = 6.5$ ($B-V = +0.20$) and 5.78 (-0.08) [GOI]. Dec. 29.77: comet smaller, but with higher surface brightness, than nearby M33; both objects also faintly visible w/ naked eye [BOU]. Dec. 29.77: also visible w/ naked eye [DIJ]. Dec. 29.78: on CCD images, a tail is visible (but not very prominent) in p.a. $\sim 70^\circ$ [QVA]. Dec. 30.49: $B-V$ values of comp. stars were +0.57, +0.57, and +0.79 [NAG08]. Dec. 30.77: comet close to M33 [BUS01]. Dec. 30.78: “nice view — comet next to M33” [DIJ]. Dec. 30.79: comet close to M33; w/ 15×80 B, coma of $\sim 25'$ ($DC = 4$) [SCH04]. Dec. 30.80, 2008 Jan. 3.79, and 9.84: mountain location, very clear sky [GON05]. Dec. 30.86: using 8×50 R and 7×50 B, the comet was of similar total brightness as the nearby galaxy M33, but it appeared smaller and more condensed than M33; 8P also seen through 3×18 R, but not detected w/ naked eye; a short-exposure image (6 sec at ISO 800) using Canon EOS 400D camera (+ 100-mm-f.l. $f/2$ lens) gave a reasonable representation of how the view looked through small instruments, although the greenish color of the comet was not seen visually [GRA04]. Dec. 30.91: both M33 and 8P faintly visible w/ naked eye [GIL01]. Dec. 30.93: “comet was flying by the Triangulum galaxy M33, and they were at their closest now, only $20'$ separation; the much larger and elongated M33 possessed a significantly lower surface brightness than the round fuzz-ball comet, which was easier to see; I could glimpse comet 8P with my naked eyes together with 17P exactly at the same time! (their separation was only 22° , so when I stared at a point between them and to the right of the connecting line, I could hold them both w/ averted vision — two short-period comets seen simultaneously without optical aid!” [KAR02]. Dec. 30.95: passage of M33 — coma showed a higher surface brightness than the significantly larger galaxy [KAM01]. Dec. 31.38 and 2008 Jan. 3.34: very dark sky at sea level in Hawaii; easy naked-eye object [MOR]. Dec. 31.47: “unexpectedly, comet is moderately condensed; it was near the bright galaxy M33, within the same field-of-view; M33 was a very hard object due to the light pollution [YOS04].

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CCD image showing the greenish coma of comet 8P/Tuttle below the large galaxy M33, taken on 2007 Dec. 31.1 UT by James McGaha (Tucson, AZ, U.S.A.) with a Canon 20Da camera (+ 500-mm-f.l. E-180 $f/2.8$ lens; 600-sec exposure at ISO 800). Image copyright 2007 by J. McGaha.

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2008 Jan. 1.02: comp. stars have $V = 6.21$ ($B-V = +0.41$) and 7.00 ($+0.90$) [AMO01]. Jan. 1.67: very clear sky but strong city lights [XU]. Jan. 1.99: site of the IRAM telescope at Pico-Veleta, southern Spain [BIV]. Jan. 2.65, 3.63, and 4.65: small-city light pollution [NOV01]. Jan. 2.73: w/ 20-cm T ($50\times$), rather diffuse coma, which brightened considerably towards center (small inner coma); at $161\times$, small knot of material of mag ~ 11.5 - 12.0 [KAM01]. Jan. 3.44 and 4.44: diffuse when viewed in the city light pollution, but strongly condensed when viewed at the mountain location

and visible with naked eyes [YOS04]. Jan. 3.83: w/ 8×50 R and 10×50 B, the comet showed a diffuse coma and was markedly easier to see than M33 and NGC 7789 [GRA04]. Jan. 3.99: comp. stars have $V = 5.55$ ($B-V = +0.31$) and 5.88 (+0.56) [GOI]. Jan. 5.48 and 6.47: very bad conditions due to the terrible city light pollution; extremely difficult to see a 5th-mag comet [YOS04]. Jan. 5.97: comp. stars have $V = 5.88$ ($B-V = +0.62$) and 6.01 (+0.56) [AMO01]. Jan. 6.00: comp. stars have $V = 5.88$ ($B-V = +0.56$) and 6.52 (+0.30) [AMO01]. Jan. 6.74: w/ 30-cm T (75×), rather diffuse coma, which brightened considerably towards center; at 242×, false nucleus of mag 13.5 within bright central cond. [KAM01]. Jan. 6.78: near sea level; clear sky [GON05]. Jan. 6.97, 7.97, and 8.98: comp. stars have $V = 5.63$ ($B-V = +0.53$) and 5.88 (+0.56) [GOI]. Jan. 6.98, 8.02, and 9.01: comp. stars have $V = 5.43$ ($B-V = +0.15$), 5.88 (+0.62), and 6.01 (+0.56) [AMO01]. Jan. 8.76: w/ 20-cm T (50×), the coma showed the same morphology as two nights ago; at 161×, stellar false nucleus of mag 13.0 [KAM01]. Jan. 9.50: $B-V$ values of comp. stars were +0.51, +0.60, and +0.67 [NAG08]. Jan. 11.74: light pollution [KAR02]. Jan. 11.85: obs. from Gatyska, Poleski National Park; comet alt. 15° [PAR03]. Jan. 12.75: comet between two stars [SCH04]. Jan. 14.97, 15.97, and 20.10: moonlight [AMO01]. Jan. 14.97: comp. stars have $V = 5.20$ ($B-V = +0.60$) and 5.88 (+1.26) [AMO01]. Jan. 15.97: comp. stars have $V = 5.20$ ($B-V = +0.60$), 5.88 (+1.26), and 6.22 (+0.94) [AMO01]. Jan. 20.10: comp. stars have $V = 5.83$ ($B-V = +0.48$) and 6.11 (+1.11); clouds [AMO01]. Jan. 21.07: comp. stars have $V = 5.83$ ($B-V = +0.43$) and 6.42 (0.43); moonlight interference [GOI] Jan. 25.00: comp. stars have $V = 6.67$ ($B-V = +0.16$) and 6.37 (+0.03) [GOI]. Jan. 28.03: comp. stars have $V = 6.01$ ($B-V = +0.92$) and 6.49 (+0.52) [AMO01]. Jan. 29.98: comp. stars have $V = 6.67$ ($B-V = +0.16$) and 7.20 (-0.01) [GOI].

◊ *Comet 17P/Holmes* ⇒ 2007 May 19.75: comp. star has $B-V = +1.06$ [KAD02]. May 25.77: $B-V$ values of comp. stars were +0.70, +0.52, and +0.91 [KAD02]. June 2.74: comp. star has $B-V = +0.65$; obs. made through thin clouds [KAD02]. June 19.43: “measurement is of an extremely faint suspect, which unfortunately could not be confirmed as being the comet” [HAL]. June 22.73: $B-V$ values of comp. stars were +0.88 and +0.87 [KAD02]. June 29.75: $B-V$ values of comp. stars were +0.54 and +0.67 [KAD02]. July 5.77: comp. star has $B-V = +0.56$ [KAD02]. July 15.78: $B-V$ values of comp. stars were +0.59 and +0.68 [KAD02]. July 27.73: $B-V$ values of comp. stars were +0.85 and +0.46; coma involved with a star [KAD02]. Aug. 26.70: comp. star has $B-V = +0.81$ [KAD02]. Sept. 25.71: comp. star has $B-V = +0.86$ [KAD02].

Oct. 21.60: comp. star has $B-V = +0.51$ [KAD02]. Oct. 24.54: “easy naked-eye object; the appearance was completely stellar, even when viewed at highest magnification through a telescope” [HAL]. Oct. 24.61: comp. star has $B-V = +1.08$; exp. time 0.12 sec [KAD02]. Oct. 24.89: clearly brighter than δ Per; w/ 20×90 B, DC = 9, slight red color [SCA02]. Oct. 25.0: narrowband-filtered photometry obtained w/ a 25-cm $f/12$ reflector (CCD image scale 0.6/pixel; seeing ~ 2.7 FWHM) yields total mag ~ 2.2 w/ a red filter (for the dust/continuum, centered at 647 nm, w/ FWHM = 10nm) and ~ 3.5 w/ a blue filter (for the dust/continuum, centered at 450 nm, w/ FWHM = 10nm); the photometric profile of the coma shows an asymmetric distribution, with a sharp central cond. nearly 8" in dia., offset almost 10" offset toward SW from the outer faint coma (whose total dia. was ~ 50 "; ‘color index’ of the dust (blue continuum minus red continuum) was $\sim +1.4$; stacking of 90 red-filtered and 50 blue-filtered 10-sec exposures shows consistently the presence of a plume-like feature extending almost 15" toward SW [Giovanni Sostero and Ernesto Guido, Remanzacco, Italy]. Oct. 25.22: w/ 41-cm $f/4$ L (70×), coma dia. 1.3 [HAL]. Oct. 25.35: 0.5-sec CCD exposures; inner coma of dia. 14"; outer coma of dia. 79"; comp. star GSC 3334518 from *GSC 1.1* (“I calibrated this star in *R* using a fit in CAA, which uses ~ 50 stars from USNO-A2.0 to get an *R* mag; I then use this derived mag to set the zero point in *Mira* software, where I did the photometry”) [MCG]. Oct. 25.53: “distinctly brighter than during previous morning; a distinct brightening, and increase in coma dia., was observed during the course of the night”; w/ 41-cm $f/4$ L (70×), coma dia. 1.5 [HAL]. Oct. 25.61, 31.52, Nov. 2.63, 3.72, 7.67, 18.45, 30.60, and Dec. 5.52: **Guide 8.0** software used for comp.-star mags [TSU02]. Oct. 25.89: w/ 11×80 B, coma dia. 1.5, DC = 9 [LAB02]. Oct. 25.91: apparently-stellar object in Perseus (DC = 9); to naked eye, the comet looks like a star, but w/ 20×90 B, diffuse coma of dia. 3' w/ a slight red color [SCA02].

Oct. 26-2008 Feb. 11: ref. code TJ uncertain; comp.-star mags taken from *Guide 8.0* (Project Pluto) software, which simply states “Johnson *V*” magnitudes from the Hipparcos/Tycho satellite project [BOR]. Oct. 26.07: w/ 15×70 B, coma dia. 6.2 (outer envelope or halo), DC = 8; w/ 41-cm $f/5$ L (57×), coma dia. 2.9; outer envelope or halo has dia. 5.8 [BOR]. Oct. 26.19: “bright moonlight (full moon 35° away); w/ 41-cm $f/4$ L (70×), coma dia. 3.4, and there is a hint of a faint outer halo surrounding this (measured) inner coma” [HAL]. Oct. 26.84: obs. from Guangzhou, China; strong moonlight and city light pollution; clouds; extremely hazy sky [XU]. Oct. 26.86: w/ 20×90 B, coma extends to $\sim 10'$; a CCD color image shows a greenish faint outer coma surrounding an inner coma that extends to at least 15' [SCA02]. Oct. 26.91: w/ 11×80 B, coma dia. 4', DC = 8 [LAB02]. Oct. 27.0 and Nov. 23.82: moonlight [HOR03]. Oct. 27.11: “bright moonlight; the outer halo that was suspected the previous night is now definitely detectable telescopically [HAL]. Oct. 27.25-Dec. 3.27: source of Hipparcos-satellite magnitudes was Simbad website [OME]. Oct. 27.71: $B-V$ values of comp. stars were +1.05 and +0.74; inner bright coma of dia. 5.0, outer faint coma of dia. 16', no tail; central cond. of mag 7.2-7.8 (total mag 2.6) [KAD02]. Oct. 27.86: w/ 11×80 B, coma dia. 5' [LAB02]. Oct. 27.9 and Dec. 26.83: moonlight; fog [HOR03]. Oct. 27.99: w/ 15×70 B, coma dia. 7.5, DC = 7-8; w/ 41-cm $f/5$ L (57×), coma dia. 6.3, DC = 7 [BOR]. Oct. 28.50: $B-V$ values of comp. stars were +0.67, +0.50, and +0.45 [KAD02]. Oct. 28.81: w/ 11×80 B, coma dia. 4', DC = 9 [LAB02]. Oct. 28.98: w/ 15×70 B, coma dia. 8.5, DC = 7 (outer envelope or halo has dia. 15'); w/ 41-cm $f/5$ L (57×), coma dia. 7.2, DC = 6 (outer envelope or halo has dia. 13') [BOR].

Oct. 29.77: round coma with clear central cond. of mag ~ 8.0 [RIE]. Oct. 29.79: w/ 44-cm $f/5$ L (63×), coma dia. 11.8 [HAS02]. Oct. 29.95: w/ 11×80 B, coma dia. 8', DC = 9 [LAB02]. Oct. 29.99: w/ 15×70 B, coma dia. 9', DC = 7; outer envelope or halo has dia. 12' [BOR]. Oct. 30.09: outer halo of dia. 25' via 12×50 B, with inner coma of dia. 10' [HAL]. Oct. 30.10: w/ 20-cm L (42×), bright false nucleus with fanlike central cond. of ~ 2.5 ; yellow inner coma of size $\sim 8'$ (sharp at sunlit side in p.a. 0°-90°, and more diffuse at opposite side in p.a. 180°-270°); very weak outer coma of size $\sim 20'$ [SCH04]. Oct. 30.79: w/ 30-cm L (39×), bright false nucleus of mag ~ 8.0 w/ fanlike central cond. of size \sim

2/5 in p.a. 165°-255°; yellow inner coma of size $\sim 10'$ (sharp at sunlit side in p.a. 0°-90°, and more diffuse at opposite side in p.a. 180°-270°); very weak outer coma of size $\sim 20'$ [SCH04]. Oct. 30.79: w/ 21×100 B, bright false nucleus of mag 7.9 w/ fanlike pattern in p.a. 210°; round, yellow, inner coma of size $\sim 9'$ (more diffuse at p.a. 270°); at $\sim 2'$ from false nucleus, a half-circular dark band starts roughly at p.a. 90°; very weak outer coma of size $\sim 18'$ [BUS01]. Oct. 30.84: w/ 11×80 B, coma dia. 12', DC = 9 [LAB02]. Oct. 30.86: w/ 20×90 B, there is a strong false nucleus, extended $\sim 2'$ in p.a. 220°; an intense inner coma is surrounded by an outer, large green coma that extends at least 30'; no tail visible [SCA02]. Oct. 30.98: w/ 15×70 B, coma dia. 11', DC = 6-7 (outer coma dia. 23'); w/ 41-cm $f/5$ L (57×), coma dia. 7'2, DC = 6 [BOR]. Oct. 31.78: large-scale 'bulb' structure seen with optocenter 1' in p.a. 211° from central cond.; thin stream of material in bulb emerging about 1'5 from the central cond. in p.a. 211°; coma seems to have an outer-edge dust shell $\sim 1'$ wide [SRB]. Oct. 31.78 and Nov. 1.72: large, circular coma whose outer edge is elongated in p.a. 211°; center of the coma shifted by 18'' in p.a. 211° from the central cond.; brightness measurements for apertures $\leq 1'6$ were centered on cond., but center of coma preferred when larger apertures used; the brightness of the 'bulb' was measured in a circular aperture centered at the optocenter for aperture size 1'2 in tab. data; other large-scale structures in the coma were visible after image processing; curved dust structures surrounded the central cond. and bulb [SRB]. Oct. 31.80: compact, disk-like coma w/ bright central part (dia. 9') and faint outer halo (dia. $\sim 35'$) [HOR02]. Oct. 31.82: compact, disk-like coma w/ bright central part (dia. 8') and faint outer halo (dia. $\sim 30'$) [HOR03]. Oct. 31.87: w/ 44-cm $f/5$ L (63×), coma dia. 10'2 [HAS02].

Nov. 1.04: w/ 12.0-cm $f/8$ R (111×), the comet showed a disk of size 10' and an outer diffuse halo; the disk appeared brown-yellow and the halo blue-green; at 25×, coma dia. 24' [SKI]. Nov. 1.05: w/ 15×70 B, coma dia. 12'; outer envelope or halo has dia. 27' [BOR]. Nov. 1.08: w/ 7×50 B, tab. mag est. refers to the disk-like inner coma of 10'; w/ 15.2-cm L, the outer diffuse coma was detected fairly easily; the MM = 'N' tab. est. refers to an apparently stellar false nucleus; no tail was seen [GRA04]. Nov. 1.09: comp. stars have $V = 1.79$ ($B-V = +0.48$) and 3.01 (-0.13) [AMO01]. Nov. 1.09, 7.08, 16.04, 20.03, 22.06, 23.04, 27.03, 29.04, 30.07, Dec. 13.98, 14.98, and 2008 Jan. 6.00: light pollution [AMO01]. 2007 Nov. 1.09 and 7.08: clouds [AMO01]. Nov. 1.09, 7.08, 16.04, and 20.03: comet alt. 8° [AMO01]. Nov. 1.7, 4.83, 5.8, 12.9, 18.88, and 19.80: light pollution [HOR03]. Nov. 1.72: large-scale 'bulb' structure w/ optocenter located 1'2 in p.a. 211° from central cond.; two or three thin streams of material $\sim 1'5$ long seen in 'bulb' in p.a. 211° (only the brightest stream is emerging from the central cond.; streams continue farther into coma with total length $\sim 6'$); outer-edge dust shell of the coma $\sim 1'$ wide [SRB]. Nov. 1.76: "similar in brightness as Algol (which was not at minimum); w/ 20×80 B, the comet was a circular disk with uniform brightness except for the central cond., which was elongated NNE-SSW; a pseudo-nucleus was offset towards NNE in the central cond.; a dark arc spanning $\sim 150^\circ$ followed just inside the rim on the NE side of the disk, giving impression of 'half-annularity'; the 7.6-mag star HD 23104 was situated just at the rim on the W side of the disk"; coma dia. 14', DC = 7 [KAR02]. Nov. 1.80, 2.5, 3.5, 7.7, 8.67, 9.46, 9.6, 12.46, 12.56, 17.48, 18.75, 20.53, 21.54, 22.72, 28.67, 29.5, Dec. 1.60, 5.49, 7.54, 8.49, 9.73, 14.60, 17.68, 30.53, 2008 Jan. 1.48, 4.42, and 5.52: Guide 8.0 software used for comp.-star mags [YOS02]. 2007 Nov. 1.84 and 28.73: obs. from Valašské Meziříčí Observatory; no extinction correction applied; experimental measurement with Nikon D50 DSLR camera; original color RAW (NEF) files converted to gray-scale FITS with binning factor 3 [SRB]. Nov. 1.84: four comp. stars in the same field-of-view; CCD placed in the focus of coudé refractor; large, circular coma; center of the coma shifted by 18'' in p.a. 217° from the central cond.; possible outer coma size $> 25'$; brightness measurements w/ aperture dia. $\leq 2'3$ were centered at cond., but center of coma preferred when using larger apertures; large-scale 'bulb'-tail-like structure with optocenter shifted 1'1 in p.a. 211° from the central cond.; when brightness of the 'bulb' measured was measured in a circular apertures centered at the optocenter, mag 5.9 was obtained; stream of material in 'bulb'; other large-scale structures in coma visible after image processing [SRB]. Nov. 1.84: w/ 11×80 B, coma dia. 25', DC = 8 [LAB02]. Nov. 1.85: w/ 20.3-cm T, faint outer coma dia. 33' and inner-disk dia. 12'; starlike central cond. of mag 10.8; bright oval region extends 2'3 from center in p.a. 220°; three main tail-like radial features were visible, extending 0'6 from center in p.a. 170°, 210°, and 270° [GON05]. Nov. 1.85, 3.8, 7.82, 9.95, 14.03, 17.01, 27.81, Dec. 5.02, 11.81, 26.78, and 2008 Jan. 26.83: mountain location, very clear sky [GON05]. 2007 Nov. 1.89: w/ 44-cm $f/5$ L (63×), coma dia. 12'8 [HAS02]. Nov. 1.90: "well visible w/ unaided eyes; w/ 9×63 B, coma more diffuse, but still of high surface brightness with a significantly brighter central region (dia. $\sim 1/4$ of the coma's dia.), the bright coma was surrounded by a faint outer coma of dia. 40'; no tail detected; with 30-cm T (75×), stellar false nucleus of mag 9.5, which sat on the NNE-top of the slightly elliptical (NNE-SSW), significantly brighter, central region; the central region was slightly displaced towards SSW, the false nucleus to the NNE; the outer coma was surprisingly well visible" [KAM01]. Nov. 1.92: w/ naked eye, mag 2.9, coma dia. 19', DC = 4-5 [MAR02]. Nov. 1.96-1.97: estimates based on comp. w/ α , γ and δ Per; similar m_1 result if additionally using α UMi and δ Cas [PER01]. Nov. 1.98: w/ 15×70 B, coma dia. 13', DC = 6; outer envelope or halo has dia. 35'; w/ 41-cm $f/5$ L (57×), coma dia. 11'2, DC = 5-6 [BOR].

Nov. 2.09: using 7×50 B, MM = 'M' est. is of the inner coma (size 12'); w/ 7.0-cm R (20×), inner coma showed an elliptical central cond. 4' in length and directed towards p.a. 220°; glow from the outer coma was clearly fainter than M42 and brighter than M33 [GRA04]. Nov. 2.145: "crystal-clear skies w/ excellent transparency; limiting mag was 5.3; it is quite amazing how much more one can see with the Moon finally out of the way; unlike a week ago when the comet appeared mainly stellar — like a nova that appeared in northern Perseus — the comet now appears to the eye like a little circular cloud; in my 7×35 B, 17P looks like a large and super-bright version of M13 (dia. est. as at least 20'); comet no longer had a distinct yellowish glow — rather it now appears with more of a whitish coloration; total mag 2.4 w/ naked eye (Marfak and δ Per used as comp. stars)" [Joe Rao, Putnam Valley, NY, U.S.A.]. Nov. 2.17: outer bright coma with dia. $\simeq 15'$ with (still) a finger of brighter material in the middle of this 15' coma that is pointing SW-ward, and (again) the NE round coma boundary is notably sharp, whereas the SW coma is not so round, not sharp, and fades into the background; also seems to be a very faint diffuse coma outside the bright 15' coma in 20×80 B [GRE]. Nov. 2.17: outer

halo of dia. 36' and inner coma of dia. 13' w/ 12×50 B; in 41-cm L, there are indications of a faint tail extending $\approx 12'$ from the 'edge' of the outer halo [HAL]. Nov. 2.50: $B-V$ values of comp. stars were +0.56, +0.63, and +0.85 [YOS02]. Nov. 2.60, 3.62, 7.70, 16.77, Dec. 2.62, 5.69, 9.78, 2008 Jan. 6.63, and 9.61: **Guide 8.0** software used for comp.-star mags [NAG04]. 2007 Nov. 2.82: w/ 44-cm $f/5$ L (63×), coma dia. 10'7 [HAS02]. Nov. 2.83: clearly more active than previous night; via naked eye, a bright coma is visible w/ a central cond. (DC = 7); w/ 25-cm $f/4.8$ L (48×), an ion tail is visible for ~ 0.5 w/ some filaments; also, the outer green coma is faintly visible; a co-added CCD image (100 thirty-sec exposures) w/ the 25-cm L (+ R_c filter) on Nov. 2.80 clearly shows some peculiar structure in the central region, with four brighter structures in p.a. 220° [SCA02]. Nov. 2.90: w/ 30.5-cm $f/5$ L (214×), coma dia. 15' [GOB01]. Nov. 2.96, 4.01, 5.01, 6.07, 7.08, 8.10, and 9.16: comp. w/ α , γ , δ , and ϵ Per, α UMi, β Tri, and δ Cas [PER01]. Nov. 2.99: w/ 6×30 B, coma dia. 40' [MAR02].

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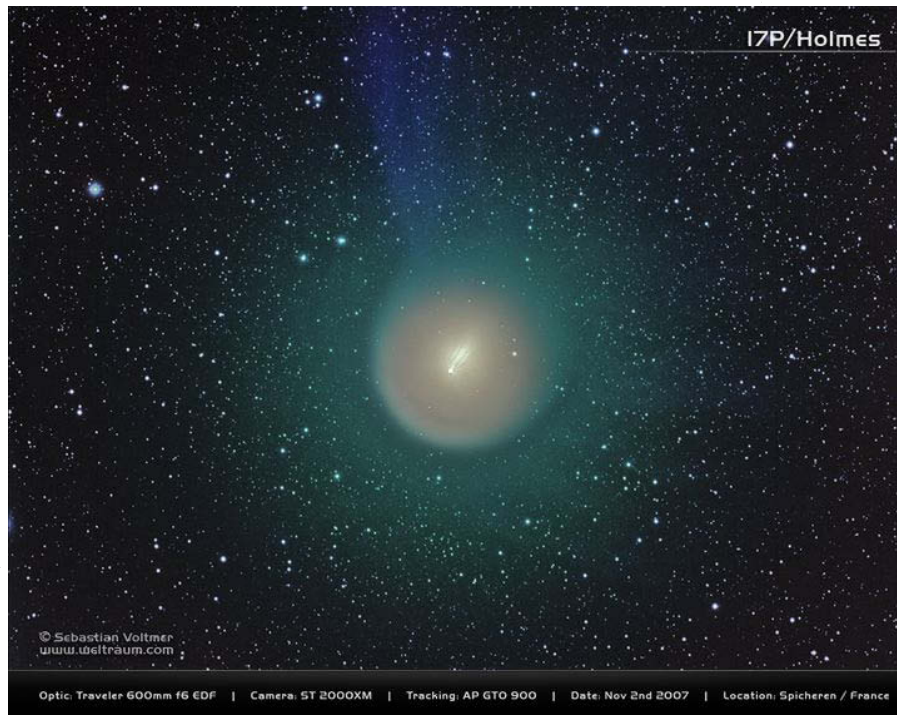


Image of comet 17P/Holmes taken by Sebastian Voltmer (Saarbrücken, Germany) with a 4.1-inch $f/6$ refractor (+ SBIG ST-2000XM CCD camera) from Spicheren, France; 42-min exposure beginning on 2007 Nov. 2.88 (field size 60', north is up). Image processed to highlight the comet's bright golden core (with jets and streamers), its greenish halo, and its emerging faint blue tail. Image copyright 2007 by S. Voltmer.

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Nov. 3.46, 6.82, 7.53, 8.81, 11.83, 14.80, 16.81, 18.81, 23.43, Dec. 2.81, 3.51, 5.52, 9.44, 13.67, 15.51, 16.52, 17.52, 26.40, 30.46, 31.41, 2008 Jan. 2.42, 4.40, 8.46, 15.46, 25.47, and 31.47: **Guide 8.0** software used for comp.-star mags [MIY01]. 2007 Nov. 3.48: "w/ 40-cm telescope, comet is a huge round disk; the rim of the N half is sharp, while the rim of the S half is dim, melting into the background sky — so the impression is that of a jellyfish!; the central bright core's dia. is a quarter that of the disk; a faint stellar nuclear cond. is located at the N edge of the central core; the disk is flat w/ no structures, even at high magnification; the disk is gray with no transparency, so it looks like smoke"; through a 10×70 monocular, outer faint gas coma has dia. 36', and the bright dust disk has dia. 15'; at dark obs. site w/ naked eyes, object looks cometary w/ strong cond. [YOS04]. Nov. 3.50: $B-V$ values of comp. stars were +0.56, +0.63, and +0.85 [YOS02]. Nov. 3.55: $B-V$ values of comp. stars were +1.04 and +0.55 [KAD02]. Nov. 3.62, 7.6, 8.57, 11.50, 12.6, 13.53, 14.6, 15.6, 16.58, 17.55, 18.53, 19.67, 20.72, 22.61, 23.66, Dec. 1.60, 2.56, 3.56, 5.51, 6.55, 7.52, 9.57, 11.56, 13.54, 14.58, 16.59, 17.60, 20.58, 30.39, 31.39, 2008 Jan. 1.52, 4.49, 5.63, 10.48, and 26.47: **The Sky ver. 5** software used for comp.-star mags [MIT]. 2007 Nov. 3.62: w/ 30.4-cm L (79×), mag of central cond. 11.0 (ref: TJ) and 12'-long tail in p.a. 215° [NAG04]. Nov. 3.74: "comet had a circular, high-surface-brightness inner coma of dia. 16', which contained a fuzzy, 4' × 3' central cond., elongated towards p.a. 205°; a faint, non-stellar pseudo-nucleus of about 11th mag was situated on the N side of the central cond.; the inner coma's S-SW edge was fuzzy compared to the opposite edge on the N-NE, which was sharply defined; the N part of the inner coma's interior contained a darker, triangular cavity whose N-NE edge followed inside the inner coma's rim; the bright inner coma was surrounded by a very faint outer coma whose shell appeared slightly thinner than the inner coma but had no sharp boundaries" (its overall dia. was $\sim 40'$); w/ 25×100 B, coma dia. 40', DC = 6 [KAR02]. Nov. 3.8: w/ 20-cm T (77×), faint outer coma of dia. 35'; inner disk of dia. 16'; starlike central cond. of mag 11.0; bright oval region extends 2'5 from center in p.a. 220°; inner-coma disk's boundary from p.a. 140° to 290° is becoming diffuse compared to the distinct N boundary; three main tail-like radial features were visible — in p.a. 170° (extending 0.9 from center), 210° (extending 0.9), and 270° (extending 0.6) [GON05]. Nov. 3.83:

coma bigger and more diffuse than at previous obs.; tab. coma dia. is the yellow inner coma; w/ 21×100 B, a weak outer coma of size $\sim 26'$ is visible [BUS01]. Nov. 3.84: weak outer coma of dia. $\sim 25'$ [RIE]. Nov. 3.87: “obs. during brief clear period; tab. coma dia. (7×50 B) is basically the dust coma” [BOU]. Nov. 3.87: w/ 15×60 B, outer coma 34'; some annular structure in dust coma visible; onset of (gas) tail in p.a. 205° [DIJ]. Nov. 3.88: w/ 11×80 B, coma dia. 25', DC = 6 [LAB02]. Nov. 3.92: in 7×50 B and 12.0-cm R, outer halo of dia. 40'; using 12.0-cm f/8 R (111×), the size of the inner disk was 14'; at 25×, coma dia. 30'; dark sky [SKI]. Nov. 3.94: w/ 10×50 B, inner coma of size $\sim 20'$ and very weak outer coma of size $\sim 50'$; w/ 20-cm L (42×), false nucleus of mag ~ 9 w/ fanlike central cond. of size $\sim 5'$; coma of size $\sim 15'$ w/ sharp edge and dark band at p.a. 300°-70° and diffuse edge at p.a. 140°-250° [SCH04]. Nov. 3.95: in 7×50 B, coma dia. $\sim 40'$, DC = D6; surface brightness of inner disk-like coma (size $\sim 15'$) appeared fainter than previously, but still considerably brighter than the bulge of M31; brightness of the outer diffuse coma was comparable to M33 [GRA04].

Nov. 4.01: similar m_1 via in-focus naked-eye estimate [PER01]. Nov. 4.09: w/ 15×70 B, coma dia. 18', DC = 5 [BOR]. Nov. 4.09, 5.32, 7.05, 11.93, and 14.00: tail p.a. is direction of the coma's anti-solar elongation [BOR]. Nov. 4.20: “0.8-deg tail/coma extension in p.a. 240° seen in 25×100 B; the sheer size of the outer coma makes it tough to differentiate between a tail and an elongated structure” [CRE01]. Nov. 4.21: outer halo of dia. 40' and inner coma of dia. 15' w/ 12×50 B [HAL]. Nov. 4.23: w/ 20×80 B, outer bright coma dia. $\simeq 16'$ [GRE]. Nov. 4.50: apparent naked-eye fading from mag 2.1 to 3.0 in 24 hr was strongly influenced by obs. tonight from a large city (even though it is clearly visible with naked eyes, it looks almost stellar in the light-polluted sky) [YOS04]. Nov. 5.26: w/ 20×80 B, outer bright coma dia. $\simeq 20'$, and its surface brightness seems lower than previously [GRE]. Nov. 5.73: w/ 10×50 B, coma dia. 14'6 [HAS02]. Nov. 5.79: large, circular coma elongated in p.a. 206°; the center of the coma is shifted by 1'4 in p.a. 208° from the central cond.; brightness measurements w/ aperture $\leq 1'6$ were centered on central cond., but the center of the coma preferred when larger apertures used; large-scale ‘bulb’ structure w/ optocenter located 1'9 from the central cond. in p.a. 206°; brightness of the ‘bulb’ measured in circular apertures 1'6 and 0'8 centered on optocenter yielded mags 5.9 and 7.4, respectively; three streams of material $> 2'$ long seen in the ‘bulb’ in p.a. 206°-212°; the brightest stream, $> 4'$ long in p.a. 210° (30" wide), emerges from the central cond. and is slightly curved in the nuclear region; other large-scale structures visible in coma after image processing; curved dust structures surrounding the central cond. and ‘bulb’; outer-edge dust shell of the coma w/ thickness of $\sim 1'5$ [SRB]. Nov. 5.81: “w/ unaided eyes, bright and small nebular object; w/ 9×63 B, significantly-more-diffuse coma of dia. 22' (most diffuse towards SW) and DC = 6, w/ the central region less conspicuous; no outer coma and no tail detected (but sky a bit hazy); w/ 30-cm T (75×), coma still disk-like, but the borders more diffuse (NNE best-defined, SSW most diffuse); surface brightness has dropped; coma dia. 19'; elliptical (NNE-SSW) central region, also with lower surface brightness; false nucleus of mag 10.5; no outer coma detected” [KAM01]. Nov. 5.84: w/ 44-cm f/5 L (63×), coma dia. 18'8 [HAS02]. Nov. 5.85: w/ 11×80 B, coma dia. 40', DC = 6 [LAB02]. Nov. 5.93: w/ 30.5-cm f/5 L (60×), coma dia. 18' [GOB01]. Nov. 5.98: w/ 15×70 B, coma dia. 19', DC = 5; w/ 41-cm f/5 L (57×), coma dia. 13'6, DC = 5 [BOR].

Nov. 6.01: w/ 20-cm L (42×), diffuse false nucleus with fan-like central cond. of size $\sim 5'$; big coma of size $\sim 25'$ w/ sharp edge and dark bend at sunlit side in p.a. 320°-70°, and diffuse edge with very weak tails $\sim 0'6$ long in p.a. 205° and 0'4 in p.a. 180° [SCH04]. Nov. 6.01: “in 7×50 B, comet rather sharply defined in the solar direction, but looked elongated and more diffuse in the anti-solar direction; the tab. coma dia. refers to the dust component; only a hint of the outer coma w/ dia. $\sim 25'$ was visible under suburban conditions” [BOU]. Nov. 6.06: in 7×50 B, outer coma $\approx 24'$ (lost some of coma due to city lights) [DIJ]. Nov. 6.09: w/ 20×80 B, surface-brightness gradient of coma has smoothed out a lot — still a central-ish faint cond., with brighter material emanating toward the SW, but this central area doesn't dominate as much as in past days; 20'-22' outer coma not so well-defined, but still better defined and much more extended toward the NE (vs. the SW) [GRE]. Nov. 6.73: coma dia. 19' w/ 10×50 B [MEY]. Nov. 6.77: in 10×50 B, coma dia. $\sim 24'$ (in 20×60 B, hints of an extended gas coma about twice this dia.); fountain still visible, as well as the pseudo-nucleus [GIL01]. Nov. 6.79: w/ 15×60 B, only a hint of outer coma visible [DIJ]. Nov. 6.79: w/ 15×80 B, shaped like a jellyfish; coma with broad tail in p.a. 215°-290° (maximum 0'7 long) [RIE]. Nov. 6.83: “comet is growing in size, becoming more diffuse and slowly dimming; w/ 7×50 B, inner coma or envelope some 22' in dia.”, DC = 5 [KAR02]. Nov. 6.89: w/ 9×63 B, coma dia. 24', DC = 6 [KAM01].

Nov. 7.05: w/ 15×70 B, coma dia. 18', DC = 5-6 [BOR]. Nov. 7.08, 16.04, 20.03, 22.06, 23.04, 27.03, 29.04, 30.07, Dec. 13.98, 14.98, and 2008 Jan. 1.05: comp. stars have $V = 3.01$ (-0.13) and 4.23 (-0.06) [AMO01]. 2007 Nov. 7.08: “dry conditions (rare at this location, allowing naked-eye limiting mag 6.3 at alt. 26°, in spite of being 30 km from Lisboa's ever-increasing light pollution); nevertheless, even tonight's nice sky is a far cry from what I enjoyed here less than 20 years ago!” [PER01]. Nov. 7.18: w/ 12×50 B, very faint outer halo of dia. 57', and inner coma of dia. 22' [HAL]. Nov. 7.20: w/ Swan-band filter, comet looked definitely larger; w/ 10×50 B, coma dia. $\sim 24'$; in 20×60 B, parts of a gas tail faintly visible (in 37-cm L w/ Swan-band filter, two streamers of this tail were visible) [GIL01]. Nov. 7.49: naked-eye impression, gazing at the comet directly, is faint, but looking around the comet area (averted vision), it appears as bright as δ Per [YOS04]. Nov. 7.70: w/ 30.4-cm L (79×), mag of central cond. 10.9 (ref. TJ) [NAG04]. Nov. 7.82: in 25×100 B, outer coma's surface brightness appears much fainter than four days ago, est. dia. 55'; inner disk of dia. 21'; bright oval region extends 6'5 from center in p.a. 220°; three main tail-like features were visible — in p.a. 195° (extending 1'7 from center), 210° (extending 1'7), and 240° (extending 1'3); in 20-cm T (77×), starlike central cond. of mag 12.2 [GON05]. Nov. 7.88: the photometric aperture includes the ‘outer’ coma (dia. 19'); four Tycho/Hipparcos-catalogue ref. stars in mag range $V = 7-9.5$ [QVA]. Nov. 7.89: w/ 30.5-cm f/5 L (60×), coma dia. 21' [GOB01]. Nov. 7.92: w/ 11×80 B, coma dia. 16', DC = 5, tail 60' long [LAB02].

Nov. 8.02: w/ 10×50 B, impression of very weak tail of length $\sim 0'6$ in p.a. 200°; w/ 30-cm L (39×), false nucleus very diffuse and elongated central cond. [SCH04]. Nov. 8.04: w/ 7×50 B, coma dia. 21' and 0'5 tail barely visible in p.a. 220°; the disk-like dust coma contained an oval and more diffuse central cond.; outer coma not detected (M33 was

seen as a faint glow) [GRA04]. Nov. 8.13: w/ 41-cm $f/5$ L (57 \times), coma dia. 23', DC = 5 [BOR]. Nov. 9.16: obs. after weak weather-front passage [PER01]. Nov. 9.19: w/ 12 \times 50 B, very faint outer halo of dia. 60', and inner coma of dia. 25' [HAL]. Nov. 9.46: $B-V$ values of comp. stars were +0.56, +0.63 and +0.85 [YOS02]. Nov. 9.72: w/ 10 \times 56 B, coma dia. \sim 23', DC = 4/ [BUS01]. Nov. 9.95: in 25 \times 100 B, faint outer coma of dia. 55'; inner disk of dia. 25' (elongated towards the diffuse S boundary); bright oval region extends 7' from center in p.a. 210°; the morphology of the tail is complex after the recent DE; the old radial features are detached from the coma, the longest one extending 2°2 from center towards p.a. 190°; in 10-cm M (65 \times), starlike central cond. of mag 12.5 [GON05]. Nov. 9.98: w/ 10 \times 70 B, tail very faint; outer coma not seen w/ certainty [GRA04].

Nov. 10 to 2008 Jan. 31: "I stopped down a 5 \times 50 finder, to aperture 22 mm, in order to get all the light to the pupil of the eye, and also to dim the image to levels where the eye is most sensitive to slight brightness differences; however, in doing so, I increased the f /ratio" [PER01]. Nov. 10.01: w/ 7 \times 50 B, coma dia. 25' [SKI]. Nov. 10.10: "comp. w/ α , γ , δ , and ϵ Per, β Tri, δ and ϵ Cas; uncertainty in m_1 w/ 5 \times 22 monocular and VSS method is \pm 0.3 mag (as opposed to \pm 0.1 mag for VBM and Modified-Out methods)" [PER01]. Nov. 10.55: comet visible to naked eye through layer of thin horizon cloud [SEA]. Nov. 10.87: w/ 7 \times 50 B, other coma was glimpsed (tab. dia. refers to outer coma), its surface brightness being much inferior to that of M33; tail was faint but certainly seen; subsequent photographs showed both the tail and the outer diffuse coma; dark sky (M33 visible to naked eye) [GRA04]. Nov. 10.89: w/ naked eye, total mag 2.4, coma dia. 25', DC = 4; w/ 7 \times 50 B, coma dia. \approx 80' [MAR02]. Nov. 11.05: w/ 41-cm $f/5$ L (57 \times), coma dia. 23', DC = 5 [BOR]. Nov. 11.15: "as the coma gets larger, in-focus naked-eye estimates become increasingly inappropriate, as it is difficult to have the eye respond to the total brightness of objects much larger than 20' or so (even if using more averted vision than usual); however, the VBM method (with a 3-diopters lens), is now perhaps even less adequate due to the comet's angular proximity to α Per; nevertheless, both naked-eye estimates are still believed to be good to \pm 0.1-0.2 mag; w/ 5 \times 22 monocular, uncertainty in m_1 is \pm 0.3 mag with VSS method, as opposed to \pm 0.1 mag for VBM and Modified-Out methods" [PER01]. Nov. 11.15, 15.13, 15.99: comp. w/ α , γ , δ , and ϵ Per, δ and ϵ Cas [PER01]. Nov. 11.15: w/ 20-cm $f/10$ T (62 \times), coma dia. $>$ 30', false nucleus of mag \sim 11.5 [SOU01]. Nov. 11.21: w/ 20 \times 80 B, comet appears like it did in Barnard's 1892 Dec. Lick Obs. photo; coma becoming less round (SW side "eroding"), and overall DC is lowering as comp. to previous nights; none of my binoculars with attached eyepieces can properly be used to estimate the brightness of this large coma; fairly uniform coma brightness in 7 \times 18 B w/ very low DC [GRE]. Nov. 11.57: through 25 \times 100 B, outer edge of coma closest to N horizon appeared very sharp and distinct, whereas the opposite side was quite indistinct; column-like feature extended from central region of coma out to uppermost edge, appearing rather like a comet tail without definite head (it did not extend beyond the boundary of coma, however); in 6 \times 35 B, comet seemed slightly elongated \perp to N horizon [SEA]. Nov. 11.79: in 20 \times 60 B, 8' bright spot in p.a. 215° still visible; no tail seen [GIL01]. Nov. 11.80: w/ 8 \times 40 B, very weak fanlike tail in p.a. 205°-240° of length \sim 0°5 [RIE]. Nov. 11.81: w/ 20-cm L (42 \times), diffuse false nucleus of mag \sim 11 in slightly elongated coma (size \sim 30'), which is diffuse in p.a. 170°-240°; two very weak tails of length \sim 0°5 in p.a. 190° and \sim 0°4 in p.a. 210° [SCH04]. Nov. 11.93: w/ 15 \times 70 B, coma dia. 24', DC = 5 [BOR]. Nov. 11.94: large, bright, still well-defined coma (SSW most diffuse); coma steadily brightening towards center; no outer coma and no tail detected; w/ 9 \times 63 B, coma dia. 29', DC = 5/ [KAM01].

Nov. 12.13: observing w/ Michael Rudenko from Pelham, MA, U.S.A., in much darker skies (most of other obs. in late Oct. and in Nov. from suburban Boston site), and had wonderful views of the inner coma through Rudenko's 6-inch $f/8$ comet-hunting R, which showed a faint, not-quite-stellar cond. near the head of "knobbish" brighter area in central part of coma and numerous faint stars wonderfully visible through the coma (this cond. was more difficult to see in his 5-inch R, and not really visible in my 20 \times 80 B, w/ DC perhaps 3 in the latter instrument w/ bright outer coma dia. now \simeq 25'-30'); comet in rich star field near α Per [GRE]. Nov. 12.21: w/ 12 \times 50 B, coma dia. 30' [HAL]. Nov. 12.55: "in 25.4-cm L (71 \times), central 'column' appeared very clear, but edge of coma not quite as sharp as in 25 \times 100 B; coma had a somewhat 'frosted' look" [SEA]. Nov. 12.73: w/ 10 \times 50 B, coma dia. 32' [HAS02]. Nov. 12.78: w/ 10 \times 50 B, weak tail of length \sim 0°8 in p.a. 200° [SCH04]. Nov. 12.97: coma with smooth brightness increase towards center; small central cond.; w/ 9 \times 63 B, coma dia. 31', DC = 6 [KAM01]. Nov. 12.97: w/ 7 \times 50 B, coma dia. 28' [SKI]. Nov. 13.04: w/ 7 \times 50 B, coma dia. 30', DC = 4; an oval central area of size \sim 15' \times 7' was seen within the disk-like coma [GRA04]. Nov. 13.22: in 40-cm T (295 \times), there is no sign of a star-like central cond.; there is a patch of diffuse material; N edge of coma is extremely sharp [MOR]. Nov. 14.00: w/ 15 \times 70 B, coma dia. 29', DC = 5 [BOR]. Nov. 14.00: coma somewhat oval-shaped; edge more diffuse in the anti-solar direction [BOU]. Nov. 14.03: in 25 \times 100 B, faint outer coma was not perceptible; inner disk of size 31' (elongated towards the diffuse S boundary); bright oval region extends 11' from center in p.a. 205°; tail-like radial feature extending 0°6 from center in p.a. 200°; in 20-cm T (77 \times , starlike central cond. of mag 12.7 [GON05]. Nov. 14.17: "coma dia. \sim 28' in 10 \times 50 B and 20 \times 60 B; coma more transparent than before, as there are several stars visible shining through the coma in 20 \times 60 B; 'fountain' still visible" [GIL01]. Nov. 14.22: comp. w/ α , γ , δ , and ϵ Per [PER01]. Nov. 14.23: comet only \approx 2° from α Per, making more difficult obs.; naked-eye estimate made in Holetschek-style "impression" fashion via averted vision [GRE]. Nov. 14.64, 18.52, 19.61, 20.52, 21.54, 22.40, 22.47, 23.51, 25.49, 26.41, Dec. 1.40, 2.51, 3.44, 3.60, 4.42, 5.5, 7.41, 7.51, 9.40, 13.74, 14.56, 15.59, 16.39, 17.57, 18.5, 26.55, 30.54, 2008 Jan. 1.38, 4.41, 6.41, 9.53, 13.40, 27.43, and 31.43: **StellaNavigator** ver. 8.1 software used for comp.-star mags [NAG08]. 2007 Nov. 14.64: $B-V$ values of comp. stars were +0.51, +0.51, and +0.59 [NAG08]. Nov. 14.91: w/ 20-cm L (42 \times), diffuse coma (27') with fanlike cond. in p.a. 175°-210° [SCH04].

Nov. 15.03: "large, rather condensed object — easily visible despite proximity of α Per; in 15.6-cm L (29 \times), the elongated coma measured \approx 25' \times 30', w/ an inner brighter (also somewhat elongated) core 8' in dia.; the coma was shaped very much like a large jellyfish, rather sharply defined in the solar direction, but very diffuse in the anti-solar direction" [BOU]. Nov. 15.22: comet looks the same as yesterday, only a little bigger; w/o glasses, α Per begins to interfere with obs. [GIL01]. Nov. 15.84: w/ 10 \times 50 B, coma dia. 35'6 [HAS02]. Nov. 16.18: some hindrance from α Per [GIL01]. Nov. 16.54: comet getting diffuse, and more weakly condensed, day by day; while visible w/ naked eyes,

impossible to est. the mag [YOS04]. Nov. 16.77: w/ 30.4-cm L (79 \times), mag of central cond. 11.6 (ref: TJ) and 18'-long tail in p.a. 205 $^{\circ}$ [NAG04]. Nov. 16.79: clear sky, but some haze [QVA]. Nov. 16.82: w/ 10 \times 50 B, coma dia. 37'.8 [HAS02]. Nov. 16.83: w/ 20-cm L (42 \times), diffuse coma (24') with sharp side toward the sun and diffuse toward the tail [SCH04]. Nov. 16.86: w/ 9 \times 63 B, coma dia. 38', DC = 5 [KAM01]. Nov. 16.9: comet close to α Per [HOR02]. Nov. 17.01: comet still seen separated from α Per [GIL01]. Nov. 17.01: in 20-cm T (77 \times), faint outer coma was not perceptible; inner disk of size 35' (elongated towards the diffuse S boundary); bright oval region extends 17' from center in p.a. 205 $^{\circ}$; tail-like feature extending 0 $^{\circ}$.7 from center in p.a. 200 $^{\circ}$; starlike central cond. of mag 12.5 [GON05]. Nov. 17.07: w/ 15 \times 70 B, coma dia. 34', DC = 5 [BOR]. Nov. 17.25: naked-eye estimate too difficult because comet only \approx 1 $^{\circ}$ from α Per; the comet has become even more diffuse as seen in 20 \times 80 B, with coma dia. \simeq 30'-35', with same asymmetry as before noted w/ NE round coma having a sharp boundary, vs. diffuse SW coma, and a brighter fannish area visible from the center of the coma towards the SW; used my 1 \times 35 monocular (composed of two 35-mm B objective lenses, which was created in a cardboard tube ten years ago for estimating C/1995 O1, C/1996 B2, and total lunar eclipses) for mag est., but still very time-consuming to measure; comet just past zenith [GRE]. Nov. 17.55: finally, the rim of the coma has touched α Per; large, diffuse object; w/ naked eyes, only a faint diffuse patch visible next to α Per [YOS04]. Nov. 17.66: $B-V$ values of comp. stars were +0.53 and +0.52 [KAD02]. Nov. 17.85, 18.61, 20.63, 2008 Jan. 2.65, 3.63, and 4.65: small-city light pollution [NOV01]. Nov. 17.90: w/ 20-cm L (42 \times), diffuse coma (28') with very weak and diffuse false nucleus and fanlike cond. in p.a. 190 $^{\circ}$ -210 $^{\circ}$ [SCH04].

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CCD image of comet 17P taken by Syuichi Nakano (Sumoto, Japan) on 2007 Nov. 18.706 (30-sec exposure) with a 25-cm f/4.8 reflector (+ Canon Kiss digital camera). Field-of-view is 1 $^{\circ}$.1 \times 0 $^{\circ}$.74. The bright star is second-magnitude α Per. Image copyright 2007 by S. Nakano.

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Nov. 18.05: comp. w/ γ , δ and ϵ Per, δ and ϵ Cas [PER01]. Nov. 18.15 and 30.08: comp. stars have $V = 3.17$ ($B-V = -0.18$) and 3.95 (+0.74) [GOI]. Nov. 18.31: comet located very close to α Per, and a formal naked-eye m_1 measurement is not feasible ('guesstimated' $m_1 \sim 3$); w/ 12 \times 50 B, coma dia. 35' [HAL]. Nov. 18.45: comp. star has $B-V = +0.60$ [TSU02]. Nov. 18.55 and 19.71: outer faint coma is overlapping α Per, but the central bright core is separate from the star, so it is not difficult to est. the total mag w/ VSS method — but the dia. est. may be influenced by the star [YOS04]. Nov. 18.81: "comet becoming more diffuse; elongated in roughly N-S direction, measuring some 30' \times 40'; S edge very diffuse, just touching α Per" [BOU]. Nov. 18.81: comet close to α Per; no VBM estimate possible [MEY]. Nov. 18.94: "too near to α Per for brightness estimate; w/ 9 \times 63 B, elliptical coma (34' \times 37'), DC = 3/; w/ 30-cm T (75 \times), very large, slightly parabolic coma (NNE well-defined, SSW most diffuse); central cond. (w/o false nucleus) of dia. 20" was displaced \sim 1/6 coma dia. to NNE (it sat on the NNE-tip of the very elliptical central region, which stretched \sim 1/2 coma dia. to the SSW, and was \sim 1/6 coma dia. wide)" [KAM01]. Nov. 19.27, 19.28: comet's core only about half a degree from second-mag star α Per, making mag estimate very difficult; in binoculars, α Per was just to one side of the "fan spine" emanating toward the SW from the comet's nuclear cond. (the cond. not being noticed, but known from previous obs. and from photos), and α Per was clearly inside the comet's huge coma; encroaching clouds forced measurements more quickly than would have liked [GRE]. Nov. 19.73: α Per in outer coma [HOR02]. Nov. 19.73, 26.70, Dec. 18.88, and 20.68: moonlight [HOR02]. Nov. 19.90: easily seen w/ naked eye, and m_1 est. obtained when nearby α Per was placed just behind the top of a post; w/ 7 \times 50 B, the coma appeared much larger and brighter than the bright part of M31, showing a somewhat-brighter, oval, central region of size \sim 15' \times 10'; the 'mean' brightness of the coma was est. as halfway between two nearby stars of mag 4.96 and 5.56 (ref: TK) when these stars were defocused to 12' (the

tab. m_1 was derived from $5.26 - 5 \log(35/12)$; α Per was located just within the visible part of the coma; sky fairly dark despite the almost-10-day-old Moon [GRA04].

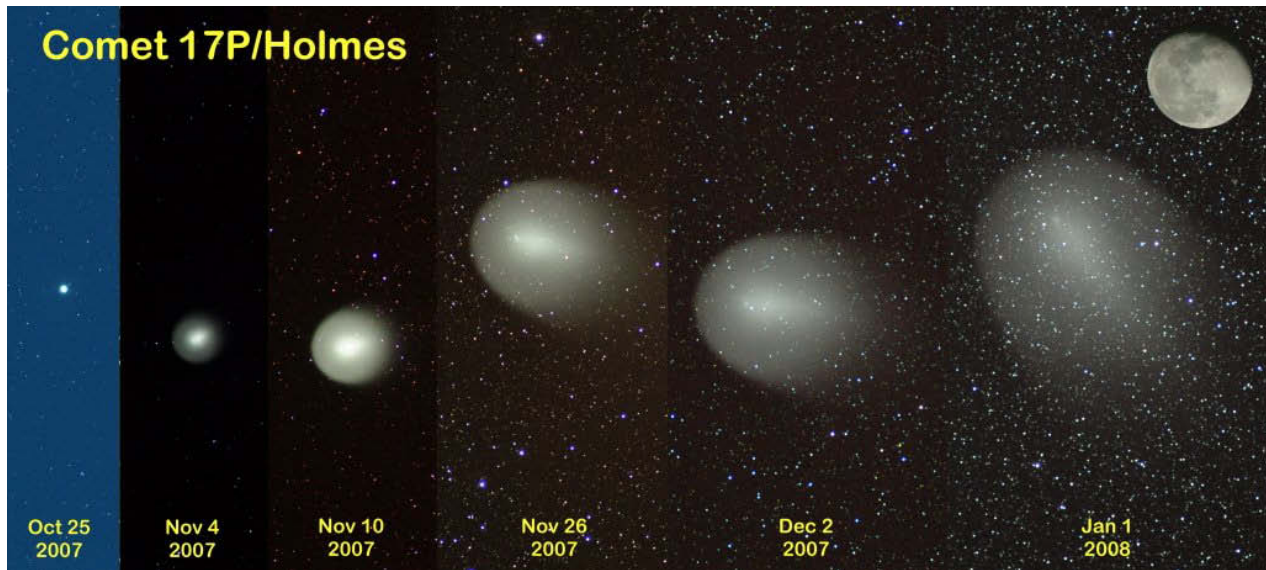
Nov. 20.03, 22.06, and 23.04: moonlight [AMO01]. Nov. 20.14: comp. stars have $V = 3.95$ ($B-V = +0.74$) and 3.13 (-0.18); comet alt. 18° ; moonlight; w/ 22-cm $f/6.5$ L ($36\times$), total mag 3.7, coma dia. $40'$, DC = 1, tail $0^\circ 5'$ long in p.a. 210° [GOI]. Nov. 20.87: in 25×100 B, coma of size $37' \times 48'$ (elongated towards the diffuse S boundary); inner brighter region extends $23'$ from central cond. in p.a. 195° ; tail-like feature extending $1^\circ 2'$ from center in p.a. 195° [GON05]. Nov. 20.87 and 22.84: urban light pollution; moonlight [GON05]. Nov. 21.05, 21.98, 23.85, 25.08, and 26.86: moonlight [DIJ]. Nov. 21.08: 3×40 opera monocular [SOU01]. Nov. 21.09: w/ 10×50 B, coma dia. $40'$, DC = 3, tail in p.a. 200° [PIL01]. Nov. 21.18: good transparency with scattered cumulus [PER01]. Nov. 21.47: sky very clear, but large Moon shines overhead, so the comet looks very faint, yet the very large diffuse coma is visible [YOS04]. Nov. 21.73: w/ 10×50 B, coma dia. $36' 4$ [HAS02]. Nov. 21.75: haze, moonlight [SCA02]. Nov. 21.97: moonlight; comet well visible near zenith; elongated roughly in N-S direction w/ dimensions $30' \times 40'$ [BOU]. Nov. 22.06: comet alt. 11° [AMO01]. Nov. 22.21: in 10×50 B, coma dia. $\sim 40' \times 30'$ [GIL01]. Nov. 22.40: $B-V$ values of comp. stars were $+0.50$, $+0.50$, and $+0.51$ [NAG08]. Nov. 22.88: "strong moonlight; brightness probably underestimated due to not enough defocusing range; still waiting for the low-power opera glasses" [MEY]. Nov. 23.03: w/ 15×70 B, coma dia. $41'$, DC = 3 [BOR]. Nov. 23.04: comet alt. 9° [AMO01]. Nov. 23.21: nearly full moon some 30° away; comet faintly visible to naked eye, now pulling away from α Per; used right side of a pair of 12×50 B, in which the eyepiece was detached so that it could be racked out far enough to do a proper total-mag est. (none of the observer's five pairs of binoculars permit the eyepieces to be racked out even *nearly* far enough); even in 20×80 B, the DC is now very low (≈ 1) [GRE]. Nov. 23.95, 24.98, 27.01, 27.83, and 28.87: comp. w/ γ , δ and ϵ Per, δ and ϵ Cas [PER01]. Nov. 23.95, 24.98, 27.01: moonlight [PER01]. Nov. 24.04: w/ 7×50 B, clearly oval — about $30' \times 45'$ in size w/ major axis directed N-S; surface brightness of coma comparable to the nebula surrounding the θ Ori complex; comet clearly visible to naked eye despite a full Moon [GRA04]. Nov. 24.10, 27.09, and Dec. 16.98: moonlight interference [GOI]. Nov. 24.10 and 27.09: comp. stars have $V = 4.05$ ($B-V = +0.59$) and 3.95 ($+0.74$) [GOI]. Nov. 24.27: difficult obs. w/ full moon only some 25° - 30° away; uncertainty in m_1 is perhaps ± 0.3 mag [GRE]. Nov. 24.98: "the comet is an easy naked-eye object in spite of moonlight, appearing as a completely diffuse (DC = 0) circular patch; in 5×22 monocular, an elongated inner-coma (superimposed on a larger circular coma) is rather less obvious than on the previous night" [PER01].

Nov. 25.71: "comet is becoming very diffuse, but easy to see in very transparent sky after showers; moon low in E, obscured by clouds" [BOU]. Nov. 25.89: moonlight; also still visible w/ naked eye [DIJ]. Nov. 26.00: "comp. essentially with γ and δ Per; ϵ Per, and δ and ϵ Cas, were at very different angular distances from the Moon and thus seen against a different sky background (nevertheless, the m_1 est. does not change whether including or discarding comparisons against these stars; the comet is an easy naked-eye object in spite of moonlight, appearing as a diffuse circular patch" [PER01]. Nov. 26.73: w/ 10×50 B, coma dia. $40'$ [HAS02]. Nov. 26.80: moonlight [GON06]. Nov. 26.93: in 10×50 B, coma dia. $\sim 47' \times 30'$ [GIL01]. Nov. 27.01: "the comet appears as a diffuse (DC = 1) patch $\sim 0^\circ 8'$ in dia. to the naked eye" [PER01]. Nov. 27.03, 29.04, and 30.07: comet alt. 13° [AMO01]. Nov. 27.05: possibly obs. through thin cirrus; w/ 12×50 B, coma dia. $45'$ [HAL]. Nov. 27.67: w/ 6×30 R, comet appeared elongated and $\sim 35' \times 50'$ in size, w/ major axis in N-S direction (its surface brightness similar to the bulge of M31); obs. before moonrise in twilight (solar alt. -12°) and w/ some interference from altostratus clouds, the comet was nevertheless easily seen w/ naked eye [GRA04]. Nov. 27.76 and 28.79: w/ 10×50 B, coma dia. $41'$ [HAS02]. Nov. 27.81: in 25×100 B, coma of size $40' \times 48'$ (elongated towards the diffuse S boundary); inner brighter region extends $23'$ from central cond. in p.a. 190° ; broad tail-like feature extending $1^\circ 2'$ from center in p.a. 190° ; obs. made after the end of astron. twilight and before moonrise [GON05]. Nov. 27.83: "to the naked eye, the comet appears more condensed (DC = 2); yet, the outer coma edges (dia. $0^\circ 6' \pm 0^\circ 2'$) are rather-less-sharply defined, as compared to the previous night (when the Moon was interfering)" [PER01]. Nov. 27.84: w/ 9×63 B, DC = 2, very large and diffuse coma ($43' \times 46'$), w/ large elliptical (NNE-SSW) central brightening; NNE best-defined, SSW most diffuse [KAM01]. Nov. 27.92: coma clearly elongated, measuring some $35' \times 45'$, roughly in a N-S direction; very clear sky w/ moon obscured by cloud [BOU]. Nov. 27.93: comet easily seen w/ naked eye as a large diffuse object, despite moonlight [BOU].

Nov. 28.63: very clear sky but moonlight and city lights [XU]. Nov. 28.73: obs. from Valašské Meziříčí Observatory; five comparison stars in the same field-of-view; large asymmetric coma elongated in p.a. 183° ($44' \times 68'$); brightness measurements for aperture dia. $\leq 34' 85$ were centered at cond., but center of coma preferred when using larger apertures; large-scale 'bulb'-tail-like structure $> 25'$ long in p.a. 183° w/ optocenter shifted $5' 5$ from the central cond. in p.a. 183° ; brightness of the 'bulb' measured in two circular apertures of dia. $13' 05$ and $6' 55$, centered at the optocenter, yielded mags 4.4 and 5.7, respectively. [SRB]. Nov. 28.75: w/ unaided eyes, well visible nebular object; w/ 9×63 B, large, very diffuse (DC = 1) coma of size $44' \times 49'$, w/ N best-defined, S fan-like; slightly brighter, very elliptical (N-S) central region; w/ 30-cm T ($75\times$), extremely large coma with very low surface brightness w/ still-well-defined N part; very elliptical (N-S) slightly brighter central region; central cond. of dia. $45''$ w/o false nucleus at the N tip of the central region, which stretched for $\sim 1/2$ coma dia. to the S; central cond. displaced to the N for $\sim 1/6$ coma dia. [KAM01]. Nov. 28.79, Dec. 5.79, 25.71, and 27.72: "tab. coma size always for minor axis" [HAS02]. Nov. 28.87: via naked eye, dia. $0^\circ 8'$, DC = 2 [PER01]. Nov. 29.08, 30.08, and Dec. 3.04: w/ 11×80 B, coma dia. $> 1^\circ$ [SOU01]. Nov. 29.08 and Dec. 2.06: comp. stars have $V = 3.17$ ($B-V = -0.18$) and 4.05 ($+0.59$) [GOI]. Nov. 29.50: $B-V$ values of comp. stars were $+0.48$, $+0.66$ and $+0.70$ [YOS02]. Nov. 29.74: w/ 10×56 B, coma size $\sim 47'$ (DC = 4) [BUS01]. Nov. 29.80: in 10×50 B, coma dia. $\sim 60' \times 40'$ [GIL01]. Nov. 29.81: "in 15.6-cm L ($29\times$), the comet is clearly elongated some $45' \times 60'$ in dia.; the coma boundary is rather well defined in the solar direction, but totally diffuse in the anti-solar direction; brighter inner coma also clearly elongated, forming a narrowing spine towards p.a. 190° (this was the center of a very diffuse tail feature extending some $0^\circ 8'$ towards p.a. 190°)" [BOU]. Nov. 29.84: w/ 20-cm L ($42\times$), diffuse coma (size $\sim 36' \times 42'$) w/ very weak false nucleus and elongated central cond. in p.a. 160° - 170° [SCH04]. Nov. 29.90, 30.82, Dec. 1.88, 2.89,

4.10, 5.08, 9.94, 10.93, 11.89, and 13.04: comp. w/ γ , δ , and τ Per, δ and ϵ Cas [PER01]. Nov. 29.90: via naked eye, dia. $0^{\circ}9$, DC = 2 [PER01]. Nov. 29.98, 30.99, Dec. 2.13, 5.14, 6.99, 9.02, and 12.99: tab. tail length is actually major axis of elongated coma (for which the p.a. is also given), whereas tab. coma dia. is minor axis of same [BOR]. Nov. 30.82: via naked eye, dia. $\sim 0^{\circ}8$, DC = 1 [PER01].

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Composite collage of CCD images of comet 17P taken by Jimmy Westlake (Steamboat Springs, CO, U.S.A.) on six nights from 2007 Oct. 25 to 2008 Jan. 1, showing the expanding coma and the decreasing degree of condensation. Westlake used a Fuji FinePix S2 Pro digital camera and a Nikkor 300-mm f/2.8 telephoto lens (piggyback-guided on a Celestron 11-inch telescope). Each comet image is reproduced here at the same scale, and an image of the waning gibbous moon — taken with the same equipment on Nov. 26 — is inset at top right to the same scale as the comet. All images were shot at ISO 800 except for Oct. 25 (ISO 400); the UT dates (and exposure times) for each comet image are as follows: 2007 Oct. 25.27 (62 sec); Nov. 5.23 (10 sec); 11.15 (69 sec); 27.06 (122 sec); Dec. 3.20 (125 sec); 2008 Jan. 2.17 (185 sec) [note that the labelled dates are local time].

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Dec. 1.79: in 25×100 B, coma of size $45' \times 55'$ (elongated towards the diffuse S boundary); inner brighter region extends $23'$ from central cond. in p.a. 185° [GON05]. Dec. 1.79, 8.78, and 2008 Jan. 10.80: suburban location, clear sky [GON05]. 2007 Dec. 1.88: “via naked eye, dia. $\sim 1^{\circ}0$, DC = 1/; as in all my previous obs. of this and other comets, dia. are measured along the so-called ‘latus rectum’ (i.e., the cord running through the pseudo-nucleus and \perp the coma’s major axis); it is also appropriate to note that the coma seen visually is somewhat different from what current CCD images show; w/ 5×22 monocular, the coma appears as a huge $50'$, nearly-circular brightness plateau surrounded by a narrow, annular outer coma with diffuse edges; a broad dust tail has been obvious since the Moon stopped interfering a couple of nights ago; however, the comet is in a rich Milky Way field, and star-alignments are numerous, so it is perhaps pointless to spend much time tracing such features visually when images can do it much better; the ‘leading’ sharp edge of the coma, so prominent in current CCD images is not obvious with the instrument used for the m_1 estimate; another fact worth mentioning is the distinct light-green color of the in-focus comet, as compared to the white extra-focal stellar images” [PER01]. Dec. 1.99: w/ 9×63 B, very large, very diffuse (DC = 1) coma of size $57' \times 50'$; N part well-defined, S part fanning out; large, elliptical central region only marginally brighter [KAM01]. Dec. 2.04: in 7×50 B, comet clearly elongated, measuring some $40' \times 55'$ along a roughly N-S axis [BOU]. Dec. 2.06 and 9.99: light pollution [GOI]. Dec. 2.60: very bright, easily visible, due to the clear sky; the central bright blob looks bar-like, extending N-S, surrounded by an extraordinary huge coma [YOS04]. Dec. 2.76: handheld 7×50 B showed the huge coma elongated N-S, which became gradually slightly brighter towards the center; slightly hazy sky between fog clouds that eventually covered the whole sky [KAR02]. Dec. 2.80: in 10×50 B, coma dia. $\sim 64' \times 40'$ [GIL01]. Dec. 2.85: w/ 20-cm L (42×), diffuse coma (size $\sim 40' \times 50'$) w/ very weak false nucleus and elongated central cond. in p.a. 170° [SCH04]. Dec. 2.89: w/ naked eye, dia. $\sim 0^{\circ}9$, DC = 1 [PER01]. Dec. 3.10, 7.08, and 12.23: w/ 12×50 B, coma dia. $50'$ [HAL]. Dec. 3.86: w/ 7×50 B, coma clearly elongated towards p.a. 170° , measuring some $45' \times 60'$; very faint tail $\sim 1^{\circ}1$ in p.a. 170° [BOU]. Dec. 3.87: w/ 10×56 B, coma size $\sim 52'$ (DC = 3) [BUS01]. Dec. 3.95: comet large and elliptical — w/ naked eye, better visible than M31; w/ 10×50 B, short fuzzy tail to the S and coma boundary better defined in the solar direction [COM]. Dec. 4.06: w/ naked eye, comet seen to be somewhat brighter than the apparent diffuse glow from the double cluster (NGC 869/NGC 884); mag est. obtained from the defocused view of the comet and the comp. stars (δ Per and ϵ Cas) as seen through +3-diopter spectacles (the observer has normal vision); w/ 6×30 R and 10×50 B, the coma was of moderate surface brightness and somewhat inferior to the central part of M31 (coma showed a brighter inner region that appeared

diffuse and very elongated, plus a parabola-shaped outer coma that was sharply defined in sunward direction) [GRA04]. Dec. 4.10: w/ naked eye, dia. $\sim 1^\circ$, DC = 2/ [PER01].

Dec. 5.02: in 25 \times 100 B, coma of size 47' \times 65' (elongated towards the diffuse S boundary); inner brighter region extends 30' from central cond. in p.a. 180 $^\circ$; broad tail-like feature extending 1 $^\circ$ 2 from center in p.a. 180 $^\circ$ [GON05]. Dec. 5.08: w/ naked eye, dia. $\sim 57'$, DC = 2 [PER01]. Dec. 5.49: $B-V$ values of comp. stars were +0.53, +0.63, and +0.70 [NAG08]. Dec. 5.79: w/ 44-cm $f/5$ L (63 \times), coma dia. 47' [HAS02]. Dec. 5.86: w/ 10 \times 56 B, coma size $\sim 55'$ (DC = 2/) [BUS01]. Dec. 5.99: in 7 \times 50 B, coma dia. $\sim 50' \times 70'$, elongated towards p.a. 170 $^\circ$ [BOU]. Dec. 6.99: w/ naked eye, coma dia. 70', DC = 3 [BOR]. Dec. 7.08: obs. hurried due to oncoming clouds; possibly obs. through thin cirrus [HAL]. Dec. 7.41: $B-V$ values of comp. stars were +0.53, +0.56, and +0.70 [NAG08]. Dec. 7.73: w/ 10 \times 56 B, coma size $\sim 57'$ (DC = 2/) [BUS01]. Dec. 7.94: in 7 \times 50 B, coma dia. $\sim 50' \times 65'$, elongated towards p.a. 165 $^\circ$ [BOU]. Dec. 7.95: in 7 \times 50 B, coma clearly elongated towards p.a. 165 $^\circ$ [DIJ]. Dec. 8-10: site of the IRAM telescope at Pico-Veleta, southern Spain [BIV]. Dec. 8.64 and 9.47: "amazingly bright from a mountain location!; much brighter, and much more attractive, than the double cluster h and χ Per (comet looks like a round planetary nebula w/ naked eyes; however, it also looks like a moderately condensed object — DC = 4 or so — because it is so bright, so it does not seem diffuse); because I am nearsighted, it is easy to est. the total mag using VSS method just taking off my glasses; it looks like a jellyfish, similar to the photos, through the 10 \times 70 monocular; the view through a 40-cm telescope is fantastic, w/ the transparent envelope covering the whole field-of-view (the rim of the envelope is very clear w/ high magnif.); no nuclear cond. visible w/ 40-cm telescope" [YOS04]. Dec. 8.78 and 11.81: in 25 \times 100 B, coma of size 52' \times 70' (elongated towards the diffuse S boundary) [GON05]. Dec. 8.78: in 25 \times 100 B, inner brighter region extends 30' from central cond. in p.a. 175 $^\circ$; broad tail-like feature extending 1 $^\circ$ 2 from center in p.a. 175 $^\circ$ [GON05]. Dec. 8.85: w/ naked eye, the comet appeared larger and brighter than the visible part of M31 and somewhat brighter than the double cluster (its angular extent of $\sim 60'$ was comparable to the Pleiades); comet only briefly obs. as the sky was about to clear; dark-sky site [GRA04]. Dec. 8.88: "comet is still impressive; coma 60' \times 50' in size and elongated N-S; 7 \times 50 B showed a central 'spine' within the parabolic-shaped coma (the spine was probably the former central cond., which was not evident anymore); comet reminded me of a jellyfish!; even naked eyes showed the N border of the comet sharper than the S" [KAR02]. Dec. 9.72: w/ 9 \times 63 B, very large, very diffuse (DC = 1) coma of size 52' \times 60' showing the same morphology as on Dec. 1 [KAM01]. Dec. 9.73: w/ 10 \times 56 B, coma size $\sim 56'$ (DC = 2/) [BUS01]. Dec. 9.75: in 15.6-cm L (24 \times), coma dia. $\sim 55' \times 75'$, still fairly sharply defined in the solar direction, but totally diffuse in the anti-solar direction; very faint and diffuse tail, extending about 1 $^\circ$ 3 from ill-defined central cond. in p.a. 165 $^\circ$ [BOU]. Dec. 9.94: w/ naked eye, dia. $\sim 1^\circ$ 1, DC = 2 [PER01]. Dec. 9.99: comp. stars have $V = 3.77$ ($B-V = +0.40$) and 3.93 (+0.71) [GOI].

Dec. 10.88: w/ 15 \times 80 B, round coma w/ elongated central cond. [SCH04]. Dec. 10.93: two 6th-mag stars in outer coma; w/ naked eye, dia. $\sim 1^\circ$ 1, DC = 3; three stars of mag 6.4-6.7 glimpsed around the comet [PER01]. Dec. 11.70: using 10 \times 50 B, the comet showed a coma w/ a tail-like central region (roughly oriented N-S) and a 'U'-shaped outer coma; the surface brightness of the central part was fainter than the bulge of M31 but brighter than M33, while the intensity of the outer coma was comparable to M33; comet easily seen w/ naked eye and brighter than the combined glow of NGC 869 and NGC 884 [GRA04]. Dec. 11.76: still easily visible to naked eye as a large diffuse object w/ some cond.; brighter than M31 [BOU]. Dec. 11.81: in 25 \times 100 B, inner brighter region extends 35' from central cond. in p.a. 170 $^\circ$; broad tail-like feature extending 1 $^\circ$ 2 from center in p.a. 170 $^\circ$ [GON05]. Dec. 11.81: w/ 10 \times 56 B, coma size $\sim 58'$ (DC = 2/) [BUS01]. Dec. 11.89: two 6th-mag stars in outer coma; w/ naked eye, dia. $\sim 1^\circ$ 1, DC = 2/; thin cirrus elsewhere in the sky [PER01]. Dec. 11.90: in 10 \times 50 B and 20 \times 60 B, coma dia. $\sim 75' \times 60'$ [GIL01]. Dec. 11.90: w/ 4 \times 30 B, coma size 60' \times 75' (DC = 2) [RIE]. Dec. 12.83: w/ 6.5 \times 44 B, coma size $\sim 57' \times 70'$ (DC = 2/) [BUS01]. Dec. 13.04: stars of mag 5.5 and 6.7 in coma; w/ naked eye, dia. $\sim 1^\circ$ 1, DC = 2/ [PER01]. Dec. 13.05: w/ naked eye, the comet was easily visible due to a dark sky and appeared slightly larger and brighter than the Praesepe cluster (M44) [GRA04]. Dec. 13.63 and 15.60: diffuse and faint due to the light pollution in the large city Yokohama (very different from the view at the mountain location); yet, it is still visible w/ naked eyes [YOS04]. Dec. 13.78: in 7 \times 50 B, large elongated object w/ dimensions of $\sim 60' \times 70'$; hint of a very faint tail extending some 1 $^\circ$ 2 in p.a. 160 $^\circ$ from very ill-defined central cond. [BOU]. Dec. 13.91, 15.95, 28.78, 2008 Jan. 1.96, 6.75, 8.79, and 13.97: "mag estimated by switching between my glasses for distance/reading" [KAM01]. 2007 Dec. 13.91: w/ 9 \times 63 B, very large, very diffuse (DC = 1) coma of size 55' \times 70', w/ unchanged morphology [KAM01]. Dec. 14.12: w/ naked eye, dia. $\sim 75'$, DC = 1/; several stars near the limit of naked-eye visibility in and around coma [PER01]. Dec. 14.12 and 15.16: comp. w/ γ , δ , and τ Per, and ϵ Cas [PER01].

Dec. 15.16: w/ naked eye, dia. $\sim 1^\circ$ 2, DC = 1 [PER01]. Dec. 15.78: w/ 15 \times 80 B, round coma of size $\sim 70'$ and very weak dust tail in p.a. 165 $^\circ$ [SCH04]. Dec. 15.90: w/ 6.5 \times 44 B, coma size $\sim 60' \times 75'$ (DC = 2) [BUS01]. Dec. 15.95: w/ 9 \times 63 B, very large, very diffuse (DC = 0/) coma of size 54' \times 68' w/ unchanged morphology [KAM01]. Dec. 16.00: "coma's angular size estimated as 70' \times 55' w/ naked eyes; similar to the double star cluster in brightness; the central jet along the major axis had become more diffuse and fainter since last week as seen with 7 \times 50 B" [KAR02]. Dec. 16.13, 26.81, 27.88, 29.88, 30.93, 2008 Jan. 1.08, and 4.03: comp. w/ γ and τ Per, and ϵ Cas [PER01]. 2007 Dec. 16.13: in 5 \times 22 monocular, coma edges are getting rather diffuse and ill-defined; w/ naked eye, dia. $\sim 1^\circ$ 2, DC = 2 [PER01]. Dec. 16.75: light pollution [HOR02]. Dec. 16.98: comp. stars have $V = 4.05$ ($B-V = +0.55$) and 3.93 (+0.71) [GOI]. Dec. 17.66 and 18.68: "extremely hard to observe comet in the large city of Yokohama; it is easier to see the comet w/ naked eyes than w/ 10 \times 66 monocular due to its very large size; it is a strange experience to see a comet visible w/ naked eyes but difficult to find using a telescope" [YOS04]. Dec. 17.66: hazy sky caused difficulty in determining comet size [YOS04]. Dec. 17.89: using 6 \times 30 R, surface brightness of comet markedly inferior to the central parts of M31 and M42; w/ naked eye, fairly easily seen and slightly brighter than the double cluster; first-quarter Moon [GRA04]. Dec. 17.91: w/ 6.5 \times 44 B, coma size $\sim 60' \times 70'$ (DC = 2) [BUS01]. Dec. 18.51: $B-V$ values of comp. stars were +0.53, +0.86, and +0.88 [NAG08]. Dec. 18.68: clear sky; comet obs. after moonset [YOS04]. Dec. 19.00: "I have no doubt that the 0.3-mag drop in m_1 in < 1 day is entirely due to the fact that the first-quarter moon is high in the sky tonight, whereas it was setting

last night and the comet was much more easily seen then; the totally diffuse nature of the very extended coma makes it susceptible to quick drops in visibility as the sky-background brightness increases" [GRE]. Dec. 19.22: using naked eye, comet appeared slightly fainter than M44; w/ 3×18 R, the comet showed an oval coma of fairly low surface brightness; this instrument was constructed from a camera lens (Canon EF 70- to 200-mm-f.l. $f/4$ L) set at f.l. slightly more than 70-mm and w/ a 24-mm ocular (Televue Panoptic); this combination gave a sufficient amount of defocusing and a very wide field ($> 20^\circ$) of good optical quality; dark sky (made a couple of hr after moonset) [GRA04].

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Wide-field CCD image by James McGaha on 2007 Dec. 31.1 showing comet 17P at upper left, the galaxy M31 at upper right, and comet 8P just below the galaxy M33 at bottom and right-of-center. McGaha used a Canon 5D camera (+ 50-mm-f.l. $f/1.4$ lens; 600-sec exposure at ISO 800). Compare with the close-up image of comet 8P and M33 on page 31 of this issue of the ICQ. Image copyright 2007 by J. McGaha.

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Dec. 21.05: w/ 8×50 R, only faintly seen as a pale, oval object; the instrument was made from a 200-mm-f.l. $f/4$ camera lens w/ a 24-mm eyepiece; comet not detected w/ naked eye due to a quite-bright sky background in moonlight [GRA04]. Dec. 25.69: using 3×18 R and 7×50 B, comet was seen as an oval glow of low surface brightness (but somewhat higher than that of M33); 17P was also seen w/ naked eye despite a 16-day-old Moon low in E sky; obs. site at lat. 64° N [GRA04]. Dec. 25.71: w/ 10×50 B, coma dia. $72'$ [HAS02]. Dec. 25.96: obs. made from reasonably dark skies in north-central Long Island (NY, U.S.A.), before moonrise; this obs. shows how low the surface brightness has gotten as the comet has spread out, and how faint the VBM method makes the comet; the comet was easily detected by naked eye, but unfortunately binoculars or other optical instruments were not available [GRE]. Dec. 26.78: in 25×100 B, coma of size $65' \times 90'$ (elongated towards the diffuse S boundary); inner brighter region extends $38'$ from central cond. in p.a. 150° ; broad tail-like feature extending $2.2'$ from center in p.a. 150° ; obs. made before moonrise [GON05]. Dec. 26.81: w/ naked eye, dia. $\sim 1.1'$, DC = 1 [PER01]. Dec. 27.07: "overall coma now very pale and vague; this overall appearance has remained ever since (in fact, the coma has grown even more pale and vague)"; w/ 12×50 B, coma dia. $70'$ [HAL]. Dec. 27.72: w/ 10×50 B, coma dia. $68'$ [HAS02]. Dec. 27.88 and 29.88: "coma edges ill-defined; tab. dia. is a conservative estimate" [PER01]. Dec. 27.88: w/ naked eye, dia. $\sim 70'$, DC = 2/ [PER01]. Dec. 28.12: w/ naked eye, faintly visible and a more challenging object than M44, but clearly seen using 3×18 R; moonlight [GRA04]. Dec. 28.75: still very easily visible with naked eye; w/ 15×80 B, coma of size $\sim 1.2^\circ \times 1.6^\circ$; elongated central cond. of size $\sim 1^\circ$ in p.a. 160° [SCH04]. Dec. 28.78: w/ 9×63 B, very large, very diffuse (DC = 0) coma of size $55' \times 72'$ (elongated along p.a. 155°), w/ now-totally-diffuse borders; central region no longer definitely distinguishable [KAM01]. Dec. 28.80: coma elongated toward p.a. 140° [MAR02]. Dec. 28.81, 29.90, 31.03, 2008 Jan. 1.01, 1.99, and 4.05: site of the IRAM telescope at Pico-veleta, southern Spain [BIV]. 2007 Dec. 28.97: comp. stars have $V = 4.05$ ($B-V = +0.55$) and 4.11 ($+0.44$) [GOI]. Dec. 29.71: city lights [RZE]. Dec. 29.76: comet still easily visible w/ naked eye as a large, diffuse object w/ slight cond.; in 7×50 B, 17P appears more-or-less elliptical w/ very-ill-defined edges and rough dimensions of $60' \times 90'$, elongated towards p.a. 145° [BOU]. Dec. 29.78: w/ 6.5×44 B, coma size $\sim 65' \times 80'$ (DC = 1/) [BUS01]. Dec. 29.87 and 30.83: obs. from Kongens Lyngby, Denmark [COM]. Dec. 29.88: thin cirrus elsewhere in the sky; average transparency; w/ naked eye, dia. $\sim 65'$, DC = 2/ [PER01]. Dec. 30.22: obs. made from usual location in suburban Boston, with it's light-polluted sky (plus snow cover), and w/ last-quarter moon rising in east; comet alt. $\sim 45^\circ$ in NW; though the comet was easy to see in binoculars, one really needs a dark sky now to properly estimate its brightness (thus the colon after the mag estimate, despite clear skies; the uncertainty of the mag estimate was perhaps ± 0.4 mag due to the extreme nature that

the monocular's eyepiece must be defocussed) [GRE]. Dec. 30.44: very large and indistinct; brightness estimate little more than a guess [SEA]. Dec. 30.47 and 31.47: "extremely diffuse; uncertain how large the comet's coma extends due to light pollution (I only managed to see the faint nebulous patch around the position on Dec. 30 in a hazy sky; on Dec. 31, w/ a clear sky, the central bright part was clearly visible, extending elliptically" [YOS04]. Dec. 30.54: $B-V$ values of comp. stars were +0.60, +0.61, and +0.72 [NAG08]. Dec. 30.78: coma dia. $\sim 1^\circ \times 1^\circ 5$, elongated towards p.a. 145° [BOU]. Dec. 30.81: in 25×100 B, coma of size $75' \times 95'$ (elongated towards the diffuse S boundary); inner brighter region extends $50'$ from central cond. in p.a. 145° ; broad tail-like feature extending $2^\circ 5$ from center in p.a. 145° [GON05]. Dec. 30.86: also faintly seen w/ naked eye; some light pollution from Oslo, otherwise favorable conditions; as a comparison to the 8P/M33 image taken this same night, this comet was also imaged (exp. 6 sec at ISO 800) using the same equipment (Canon EOS 400D camera + 100-mm-f.l. $f/2$ objective; field-of-view $13^\circ \times 8^\circ 5$) [GRA04]. Dec. 30.91: in 10×50 B, coma dia. $\sim 85' \times 60'$ [GIL01]. Dec. 30.93: w/ naked eye, dia. $\sim 1^\circ 3$, DC = 2/ [PER01]. Dec. 30.93: "comet was a huge ($1^\circ 3 \times 1^\circ 0$) ghostly stain of light in Perseus; appeared slightly fainter than the double star cluster; comet seen via naked eye together w/ comet 8P exactly at the same time; their separation was only 22° , so when I stared at a point between them and to the right of the connecting line, I could hold them both with averted vision — two short-period comets seen simultaneously without optical aid!" [KAR02]. Dec. 30.94: w/ 9×63 B, very large, extremely diffuse (DC = 0) coma of size $45' \times 75'$ w/ very vague borders; central region not distinguishable [KAM01]. Dec. 31.10: simultaneously visible to naked eye along with comet 8P/Tuttle [HAL]. Dec. 31.10 and 2008 Jan. 2.11: w/ 12×50 B, coma dia. $65'$ [HAL]. Dec. 31.38: very dark sky at sea level in Hawaii; easy naked-eye object [MOR]. Dec. 31.79: coma elongated toward p.a. 135° [MAR02].

2008 Jan. 1.08: "good transparency; in 5×22 monocular, the outer coma was suspected to $90'$, yet was extremely vague beyond the tab. $60'$ size; the sharp outline and parabolic shape apparent in current images is not perceived in the instrument used for the m_1 estimate; the comet is still an easy naked-eye object (dia. $\sim 80'$, DC = 2)" [PER01]. Jan. 1.83, 3.84, and 25.74: elliptical coma [HOR02]. Jan. 1.96: w/ 9×63 B, very large, extremely diffuse (DC = 0) coma of size $50' \times 75'$ (major axis in p.a. 135°) w/o a definite central region [KAM01]. Jan. 2.80: w/ 4×30 B, coma size $\sim 70' \times 85'$ [RIE]. Jan. 3.18 and 31.08: obs. made from rural Hubbardston, MA, U.S.A. (central Massachusetts) under fairly dark skies; by late Jan., comet no longer visible from suburban Boston (site of most of earlier 17P observations by this observer) due to low surface brightness [GRE]. Jan. 3.46: "city light pollution caused comet to appear faint, which caused my fainter mag est." [YOS04]. Jan. 3.80: in 25×100 B, coma of size $80' \times 100'$ (elongated towards the diffuse S boundary); inner brighter region extends $50'$ from central cond. in p.a. 140° ; broad tail-like feature extending $2^\circ 5$ from center in p.a. 140° [GON05]. Jan. 3.83: elongated coma w/ major axis directed towards $\approx 160^\circ$; visible to naked eye despite some light pollution [GRA04]. Jan. 3.97: w/ naked eye, coma dia. $\sim 85'$, DC = 1 [BOR]. Jan. 3.99 and 6.97: comp. stars have $V = 4.31$ ($B-V = -0.06$) and 4.11 ($+0.44$) [GOI]. Jan. 4.03: "several stars in coma (the brightest being mag 6.6) hampering the DC estimate; the comet remains an easy naked-eye object (dia. $\sim 1^\circ 3$, DC = 2)" [PER01]. Jan. 4.45: "very bright from a mountain location!; easy object w/ naked eyes, and extraordinarily large" [YOS04].

Jan. 5.83 and 6.82: w/ 2.5×30 B, coma size $\sim 70' \times 85'$ [BUS01]. Jan. 6.00: comp. stars have $V = 3.80$ ($B-V = +0.98$) and 4.23 ($+0.34$); averted vision [AMO01]. Jan. 6.73, 7.72, and 8.81: w/ 3.5×15 O, coma dia. $70' \times 55'$ [MEY]. Jan. 6.75: w/ 9×63 B, extremely large, extremely diffuse (DC = 0) coma of size $50' \times 80'$ w/o a significant central region; w/ 30-cm T ($75\times$), the coma showed as a large glow of low surface brightness, which faded very gradually into the sky background (a boundary could only be glimpsed in the NW sector); central region only marginally brighter w/o a recognizable center [KAM01]. Jan. 6.81: obs. at locatoin near sea level location, clear sky [GON05]. Jan. 6.88: w/ 7×50 B, strong central cond. [SCA02]. Jan. 7.80: comet size is $\sim 1^\circ 5 \times 1^\circ 8$, elongated in p.a. 128° [DIJ]. Jan. 7.81: w/ 6.5×44 B, coma size $\sim 70' \times 80'$ (DC = 0/) [BUS01]. Jan. 7.97: comp. stars have $V = 4.05$ ($B-V = +0.59$) and 4.11 ($+0.44$) [GOI]. Jan. 7.98: coma size $45' \times 80'$; tail p.a. $\approx 145^\circ$; w/ naked eye, coma dia. $\sim 90'$, DC = 0/ [BOR]. Jan. 8.79: comet not immediately recognizable; w/ 9×63 B, extremely large, extremely diffuse (DC = 0); ill-defined coma of size $55' \times 75'$ (major axis in p.a. 130°) w/o a significant central region [KAM01]. Jan. 8.97: comp. stars have $V = 4.23$ ($B-V = -0.06$) and 4.11 ($+0.44$) [GOI]. Jan. 9.11 and 15.16: w/ 12×50 B, coma dia. $80'$ [HAL]. Jan. 9.53: $B-V$ values of comp. stars were +0.51, +0.52, and +0.53 [NAG08]. Jan. 9.61: coma dia. $82' \times 77'$, elongated in p.a. 120° - 300° [NAG04]. Jan. 9.74: w/ 3.5×15 O, coma dia. $80' \times 55'$ [MEY]. Jan. 9.76: very elongated, structureless object, close to Algol [COM]. Jan. 9.92: in 25×100 B, coma of size $70' \times 90'$ (elongated towards the diffuse S boundary); broad tail-like feature extending $1^\circ 8$ from center in p.a. 130° [GON05]. Jan. 9.92 and 10.80: inner brighter region extends $35'$ from central cond. in p.a. 130° [GON05]. Jan. 9.99: coma size $55' \times 80'$; w/ naked eye, coma dia. $\sim 85'$, DC = 1 [BOR].

Jan. 10.45: very large and diffuse; some haze in sky [SEA]. Jan. 10.80: in 25×100 B, coma of size $70' \times 80'$ (elongated towards the diffuse SE boundary) [GON05]. Jan. 11.74: "light pollution; comet was difficult to view via naked eye from the city of Vasteras (population 130000); being located near zenith made the obs. possible" [KAR02]. Jan. 11.86: obs. from Gatsyska, Poleski National Park; used 3×24 B as monocular [PAR03]. Jan. 11.89: "comet visible as a faint glow and not detected w/ naked eye; obs. was challenging due to a rather bright sky background" [GRA04]. Jan. 11.98: w/ naked eye, coma size $\approx 2^\circ$, DC = 1; w/ 3×25 B, coma size $\approx 100'$; w/ 10×50 B, coma size $1^\circ 0 \times 1^\circ 5$, DC = 2, extended toward p.a. 130° [BOR]. Jan. 12.03: "comp. w/ τ Per and ϵ Cas; coma extension difficult to assess, given the proximity to β Per (could be as large as $1^\circ 4$ — the tab. dia. being a conservative estimate); further, as the rather-ill-defined outer coma edges could translate into larger uncertainty in the m_1 estimate, I have been making additional m_1 estimates w/ different defocusing (to match the range of uncertainty in the coma dia.); nevertheless, I still get m_1 within $\sim \pm 0.1$ mag of the value I report; the comet remains an easy naked-eye object (dia. $\sim 1^\circ 1$, DC = 1) — in fact, it was even visible from indoors through a double-glazed glass window as I was beginning dark adaptation before going outside to make the obs." [PER01]. Jan. 12.76: w/ 3.5×15 O, coma dia. $70' \times 55'$ [MEY]. Jan. 13.45: weak moonlight [SEA]. Jan. 13.90: comet very elongated; difficult — close to Algol, and some town light pollution; obs. from Kongens Lyngby, Denmark [COM]. Jan. 13.91: "large, very diffuse object, somewhat elongated towards \approx p.a. 130° ; nearby Algol is starting to

to interfere" [BOU]. Jan. 13.97: comet rather difficult; w/ 9×63 B, extremely large, extremely diffuse ($DC = 0$) coma of size $50' \times 80'$ [KAM01]. Jan. 15.16: first-quarter moon in sky [HAL]. Jan. 15.78: moonlight [PAR03]. Jan. 15.97: moonlight interference [SOU01]. Jan. 18.83: comp. w/ τ and π Per; Moon near comet, behind house; uncertainty in $m_1 \pm 0.2$ mag, essentially due to ill-defined coma edges and comet being near limit of visibility [PER01].

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CCD image produced from seventeen co-added 30-sec exposures of comet 17P taken by S. Nakano on 2008 Jan. 5.588 UT with a 10.2-cm $f/6.5$ refractor (+ Canon Kiss digital camera); field-of-view is $114' \times 76'$. The coma's size here is $\sim 65'$; note how it has become very diffuse with a much lower surface brightness, as compared to Nakano's image published on page 37 of this issue.

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Jan. 24.83: β Per hampering coma dia. and m_1 estimate; comet still seen with the naked eye; thin cirrus nearby [PER01]. Jan. 24.83, 25.87, and 26.81: comp. w/ γ , τ and π Per, plus ϵ Cas [PER01]. Jan. 24.98: comp. stars have $V = 4.23$ ($B-V = -0.06$) and 4.94 ($+0.07$) [GOI]. Jan. 25.74: comet close to Algol [HOR02]. Jan. 25.77: very close to Algol [SCA02]. Jan. 25.80: w/ 2.5×30 B, coma larger than $\sim 70' \times 75'$ [BUS01]. Jan. 25.87: " β Per hampering est.; a small, non-stellar central cond. is visible; I took great care to check whether this was a ghost from β Per, and it is visible at the same location while moving the instrument around the field; this feature is similarly visible in 14×100 B and via naked eye, and there is no background star at the current position; maybe the fading coma (or the dimmed coma due to β Per) is leaving this inner area more prominent, by contrast; for many weeks the coma has looked very uniform, with a flat brightness profile in the 5×22 monocular, so tonight it was quite a dramatic change; thin cirrus nearby" [PER01]. Jan. 25.99: w/ 10×50 B, coma size $\approx 55' \times 70'$, elongated in $\approx 130^\circ$; $DC = 0$ [BOR]. Jan. 26.76: "using 8×50 R and 7×50 B, the comet appeared as an elongated glow of about the same surface brightness as M33; this was not an easy obs. for several reasons — 17P's faint glow and location near Algol, some light pollution, and interference from high clouds; the comet was, however, seen w/ certainty, and also faintly detected using 3×18 R" [GRA04]. Jan. 26.81: " β Per no longer a significant nuisance; comet near limit of naked-eye visibility, whilst a nearby star of mag 6.0 (combined mag of double star) is easily seen" [PER01]. Jan. 26.83: in 25×100 B, coma of size $80' \times 105'$ (elongated towards the diffuse SE boundary); inner brighter region extends $40'$ from central cond. in p.a. 120° [GON05]. Jan. 28.92: comp. w/ τ and π Per, plus ϵ Cas; $25'$ central cond. superimposed on an extraordinarily large and faint outer coma; star of mag 7 in coma, plus bright stars near edge; comet visible w/ naked eye [PER01]. Jan. 29.21: m_1 measurement not obtained due to poor sky conditions; w/ 12×50 B, coma dia. $55'$ [HAL]. Jan. 29.74: coma dia. $85' \times 70'$; easy w/ naked eye [MEY]. Jan. 30.76: still faintly visible w/ naked eye, next to Algol, as a very large and diffuse glow, somewhat elongated towards roughly p.a. 120° [BOU]. Jan. 31.00: w/ 10×50 B, coma size $\approx 60' \times 92'$, elongated in $\approx 115^\circ$; $DC = 0$ [BOR]. Jan. 31.95: comp. chiefly with τ and π Per; large central cond. superimposed on a larger and fainter outer coma; stars of mag 6-7 around coma hampering dia. est.; comet visible w/ naked eye [PER01].

Feb. 1.10, 3.18, and 9.17: w/ 12×50 B, coma dia. $70'$ [HAL]. Feb. 1.77: w/ 2.5×30 B, coma size $\sim 65' \times 75'$ [BUS01]. Feb. 2.09: w/ 15×70 B, coma size $\approx 65' \times 80'$, elongated in $\approx 80^\circ$; $DC = 0-1$ [BOR]. Feb. 2.76: w/ 2.5×30 B, coma size $\sim 70' \times 80'$ [BUS01]. Feb. 6.87: difficult est. due to large, diffuse coma [SCH04]. Feb. 11.01: w/ naked eye, coma size $\approx 2^\circ$, $DC = 0$ [BOR].

◊ *Comet 29P/Schwassmann-Wachmann* \Rightarrow 2007 Nov. 3.63: “visible unexpectedly; diffuse, but not extremely faint” [YOS04]. Nov. 29.56, 2008 Jan. 5.51, and 16.65: **Guide 8.0** software used for comp.-star mags [YOS02]. Nov. 29.56: $B-V$ values of comp. stars were +0.54, +0.54, and +0.72 [YOS02]. Dec. 8.68 and 9.73: diffuse [YOS04]. Dec. 30.80: new outburst; comet virtually stellar; close to star of mag 13.9 (ref. TA) [BOU]. Dec. 30.80: no coma visible [DIJ]. Dec. 31.10: comp. stars have $V = 12.64$ and 13.18 [GOI]. Dec. 31.91: site of the IRAM telescope at Pico-veleta (elev. 2900 m), southern Spain; outburst [BIV]. 2008 Jan. 3.87: “in evolution after the recent outburst”; comp.-star mags taken from Henden photometry near CD Gem [GON05]. Jan. 4.43: “large, moderately condensed, and easy to see” [YOS04]. Jan. 5.99: short tail curved clockwise [BAR06]. Jan. 7.12: comp. stars have $V = 12.58$ ($B-V = +0.26$) and 12.66 (-0.41) [GOI]. Jan. 13.85: new outburst; strongly condensed; mountain location, very clear sky [GON05]. Jan. 13.93: almost-stellar appearance, w/ only a hint of surrounding nebulosity [BOU]. Jan. 16.00: comp. stars have $V = 10.42$ ($B-V = +0.02$) and 11.43 ($+0.67$); moonlight [AMO01]. Jan. 16.65: $B-V$ values of comp. stars were +0.47, +0.54, and +0.54 [YOS02]. Jan. 27.89: “interesting coma, in evolution after the last three consecutive outbursts” [GON05].

◊ *Comet 46P/Wirtanen* \Rightarrow 2007 Nov. 3.42: “unexpectedly, it was already bright and large; clearly visible even at somewhat-low alt.” [YOS04]. Nov. 7.92: motion checked during a 90-min period [GON05]. Nov. 7.92 and 2008 Jan. 29.82: mountain location, very clear sky [GON05]. Nov. 9.41: $B-V$ values of comp. stars were +0.63, +0.74, and +0.77 [YOS02]. Nov. 9.41, 2008 Jan. 1.39, and 5.44: **Guide 8.0** software used for comp.-star mags [YOS02]. Nov. 17.98: comp. stars have $V = 12.13$ ($B-V = +0.26$) and 12.91 [GOI]. Nov. 19.74: fan-like tail open in p.a. 60° - 118° [BAR06]. Nov. 28.98: comp. stars have $V = 12.69$ ($B-V = -0.60$) and 12.39 [GOI]. Dec. 1.98: comp. stars have $V = 11.66$ ($B-V = +0.22$) and 12.48 [GOI]. Dec. 6.39: comp. star has $B-V = +0.50$ [TSU02]. Dec. 6.39, Dec. 26.44, and 2008 Jan. 2.42: **Guide 8.0** software used for comp.-star mags [TSU02]. Dec. 9.42: “very diffuse; I obs. comet while light snow was falling, and obs. was disturbed by clouds frequently” [YOS04]. Dec. 9.97: comp. stars have $V = 11.05$ ($B-V = +0.27$) and 11.59 ($+0.41$) [GOI]. Dec. 12.98: comp. stars have $V = 11.33$ ($B-V = +0.47$) and 12.04 ($+0.72$) [AMO01]. Dec. 14.97: comp. stars have $V = 11.29$ ($B-V = +0.37$) and 11.72 ($+0.12$) [AMO01]. Dec. 16.99 and 21.97: moonlight interference [GOI]. Dec. 16.99: comp. stars have $V = 10.57$ ($B-V = +0.42$) and 10.88 ($+0.57$) [GOI]. Dec. 18.42: $B-V$ values of comp. stars were +0.55, +0.55, and +0.72 [NAG08]. Dec. 18.42, 30.40, and Jan. 4.39: **StellaNavigator** ver. 8.1 software used for comp.-star mags [NAG08]. Dec. 21.97: comp. stars have $V = 10.52$ ($B-V = +0.77$) and 10.40 ($+0.82$) [GOI]. Dec. 26.41: **Guide 8.0** software used for comp.-star mags [NAG04]. Dec. 26.44: comp. star has $B-V = +0.68$ [TSU02]. Dec. 26.80: elongated coma [GON05]. Dec. 30.40: $B-V$ values of comp. stars were +0.66, +0.74, and +0.78 [NAG08]. 2008 Jan. 2.42: comp. star has $B-V = +0.43$ [TSU02]. Jan. 4.39: “surprisingly bright and large!; central cond. strong” [YOS04]. Jan. 5.98 and 6.97: comp. stars have $V = 8.95$ ($B-V = +0.43$), 9.21 ($+0.12$), and 9.53 ($+0.48$) [AMO01]. Jan. 8.02: comp. stars have $V = 8.95$ ($B-V = +0.43$) and 9.31 ($+0.49$) [AMO01]. Jan. 8.97: comp. stars have $V = 9.31$ ($B-V = +0.49$) and 9.41 ($+0.31$) [GOI]. Jan. 8.97: comp. stars have $V = 9.31$ ($B-V = +0.49$) and 10.01 ($+0.81$) [AMO01]. Jan. 15.97: comp. stars have $V = 9.87$ ($B-V = +0.54$) and 10.13 ($+0.52$); moonlight [AMO01]. Jan. 25.73: 9.1-mag star in coma [HOR02]. Jan. 26.81, 27.80, and 29.82: zodiacal light [GON05]. Jan. 30.97: comp. stars have $V = 7.74$ ($B-V = +0.27$) and 9.49 ($+0.27$) [GOI].

◊ *Comet 50P/Arend* \Rightarrow 2007 Nov. 2.55: **Guide 8.0** software used for comp.-star mags; $B-V$ values of comp. stars were +0.49, +0.88, and +0.93 [YOS02]. Nov. 29.97: round, condensed coma; conic-like tail open (near the head of comet) in p.a. 140° - 222° [BAR06]. Dec. 8.65: visible w/ an excellent clear sky; very faint and small [YOS04]. Dec. 11.82: “very faint, small, somewhat-condensed object seen near expected position; checked Digitized Sky Survey image; no unambiguous motion detected over 40-min period, because comet moved very slowly ($11''$ /hr); session terminated by incoming low cloud from the North Sea; comp. stars used from Henden sequence of GK Per” [BOU]. Dec. 26.52: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.71$ [TSU02]. 2008 Jan. 4.50: “unexpectedly, the small, strongly condensed object was still visible” [YOS04]. Jan. 5.86: star-like central cond.; fan-like tail open in p.a. 44° - 176° [BAR06].

◊ *Comet 74P/Smirnova-Chernykh* \Rightarrow 2007 Nov. 19.97: short tail curved anti-clockwise [BAR06]. 2008 Jan. 5.97: conic-like tail open in p.a. 239° - 295° [BAR06].

◊ *Comet 93P/Lovas* \Rightarrow 2007 Nov. 3.44: **Guide 8.0** software used for comp.-star mags; $B-V$ values of comp. stars were +0.68, +0.77, and +0.83 [YOS02]. Nov. 3.47: “very bright and easy to see, probably because it was located overhead” [YOS04]. Nov. 3.89: comp.-star mags taken from Henden photometry near DZ Psc [GON05]. Nov. 20.00: fan-like tail open in p.a. 82° - 180° [BAR06]. Nov. 30.55, Dec. 26.48, and 2008 Jan. 2.53: **Guide 8.0** software used for comp.-star mags [TSU02]. Nov. 30.55: comp. star has $B-V = +0.97$ [TSU02]. Dec. 5.50 and 9.48: **Guide 8.0** software used for comp.-star mags [MIY01]. Dec. 7.48 and 18.45: **StellaNavigator** ver. 8.1 software used for comp.-star mags [NAG08]. Dec. 7.48: $B-V$ values of comp. stars were +0.54, +0.62, and +0.83 [NAG08]. Dec. 8.50 and 9.47: moderately condensed, bright, and easy to see [YOS04]. Dec. 18.45: $B-V$ values of comp. stars were +0.82, +0.86, and +0.92 [NAG08]. Dec. 26.48: comp. star has $B-V = +0.58$ [TSU02]. 2008 Jan. 2.53: comp. star has $B-V = +0.42$ [TSU02]. Jan. 4.42: “still bright and easy to see” [YOS04]. Jan. 9.99: comp. stars have $V = 13.04$ and 13.26 [GOI].

◊ *Comet 96P/Machholz* \Rightarrow 2007 Apr. 15.10: *Guide 7.0* software used for comp.-star mags [SAN07]. Apr. 21.08: *Guide 8.0* software used for comp.-star mags [NAG09].

◊ *Comet 99P/Kowal* \Rightarrow 2007 Aug. 14.44: astrometric CCD images obtained w/ 50-cm Uppsala D show a $13''$ moderately condensed circular coma of size $13''$ and mag 17.4 [R. H. McNaught, Siding Spring Observatory, Australia].

◊ *Comet 110P/Hartley* \Rightarrow 2007 Nov. 3.66: not visible; through thin clouds [YOS04]. Nov. 20.01: comet close to star of mag 15.6 [BAR06]. Dec. 9.51: moderately condensed [YOS04]. Dec. 26.58: **Guide 8.0** software used for comp.-star

mags; comp. star has $B-V = +0.42$ [TSU02]. 2008 Jan. 4.51: strongly condensed [YOS04].

◊ *Comet 128P/Shoemaker-Holt* \Rightarrow 2008 Jan. 5.16: star-like central cond.; fan-like coma; comet close to star of mag 12.4 [BAR06].

◊ *Comet 139P/Väisälä-Oterma* \Rightarrow 2008 Jan. 2.50: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.42$ [TSU02].

◊ *Comet 173P/Mueller* \Rightarrow 2008 Jan. 2.70: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.59$ [TSU02].

◊ *Comet 180P/2006 U3 (NEAT)* \Rightarrow 2007 Dec. 6.48-6.50: four stacked 30-sec CCD exposures with the Catalina 0.68-m D in Arizona in 3''-5'' seeing show a 10'' coma with a well-defined nuclear condensation and a broad, diffuse 10''-12'' tail in p.a. 290° (mag 18.9-19.2); four stacked 1-min unfiltered exposures during Dec. 6.52-6.53 show the tail length to be 14''-16'' (mag 18.5-19.0) [R. E. Hill, University of Arizona].

◊ *Comet 188P/2007 J7 (LINEAR-Mueller)* \Rightarrow 2007 Nov. 3.43: not visible; close to an 11th-mag star [YOS04]. Nov. 30.45 and Dec. 26.44: **Guide 8.0** software used for comp.-star mags [TSU02]. Nov. 30.45: comp. star has $B-V = +0.86$ [TSU02]. Dec. 26.44: comp. star has $B-V = +0.44$ [TSU02].

◊ *Comet 190P/2007 O2 (Mueller)* \Rightarrow 2007 Dec. 5.58 and 26.65: **Guide 8.0** software used for comp.-star mags [TSU02]. Dec. 5.58: comp. star has $B-V = +0.55$ [TSU02]. Dec. 26.65: comp. star has $B-V = +0.79$ [TSU02].

◊ *Comet 191P/2007 N1 (McNaught)* \Rightarrow 2007 Nov. 3.48: **Guide 8.0** software used for comp.-star mags; $B-V$ values of comp. stars were +0.60, +0.74, and +0.91 [YOS02]. Nov. 17.11: nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near GRB 000911 [GON05]. Dec. 8.64 and 9.49: unexpectedly bright and clearly visible; motion confirmed during 3 hr on Dec. 8 [YOS04].

◊ *Comet 192P/2007 T3 (Shoemaker-Levy)* \Rightarrow 2007 Dec. 26.39 and 2008 Jan. 2.38: **Guide 8.0** software used for comp.-star mags [TSU02]. 2007 Dec. 26.39: comp. star has $B-V = +0.56$ [TSU02]. 2008 Jan. 2.38: comp. star has $B-V = +0.48$ [TSU02]. Jan. 4.39: unexpectedly bright [YOS04]. Jan. 27.82: motion checked during a 40-min period; nearby field stars checked via Digitized Sky Survey; mountain location, very clear sky; zodiacal light [GON05].

◊ *Comet C/2005 L3 (McNaught)* \Rightarrow 2007 Sept. 14.82: obs. from Alps in southern France (elev. 1400-2600 m) [BIV].

◊ *Comet C/2006 K1 (McNaught)* \Rightarrow 2007 Dec. 11.54: astrometric CCD images obtained w/ 50-cm Uppsala D show a narrow tail 1'0 long in p.a. 220°, and a quite-asymmetric inner coma; total mag 16.0 [R. H. McNaught, Siding Spring Observatory, Australia].

◊ *Comet C/2006 M4 (SWAN)* \Rightarrow 2006 Oct. 10.74, 14.75, and 26.73: *Guide 8.0* software used for comp.-star mags [MAJ01]. Oct. 31.45: obs. from Sihui, China; moonlight and thin clouds [XU]. Dec. 10.47: obs. from northern Guangzhou, China; extremely clear sky; slight light pollution in direction of comet (barely seen) [XU].

◊ *Comet C/2006 OF₂ (Broughton)* \Rightarrow 2007 Nov. 2.43: **Guide 8.0** software used for comp.-star mags; $B-V$ values of comp. stars were +0.44, +0.50, and +0.88 [YOS02]. Nov. 3.40: difficult to see due to the hazy sky and a nearby 14th-mag star [YOS04]. Nov. 13.90: comp.-star mags taken from Henden photometry near HU Aqr [GON05]. Nov. 30.42: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.31$ [TSU02]. Dec. 5.79: ephemeris from Minor Planet Center website; checked with Digitized Sky Survey; limiting stellar mag 15.5 [HAS02].

◊ *Comet C/2006 P1 (McNaught)* \Rightarrow 2007 Jan. 12.57 and 14.53: daytime obs. w/ 25.6-cm L (42×, 84×), with interfering cirrus (bright background); rough comparison to Venus [BIV].

◊ *Comet C/2006 Q1 (McNaught)* \Rightarrow 2007 Dec. 9.77: extremely low [YOS04]. Dec. 30.02: comp. stars have $V = 12.68$ and 12.55; moonlight interference [GOI].

◊ *Comet C/2006 S5 (Hill)* \Rightarrow 2007 Nov. 3.65: not visible through thin clouds; possibly affected by a nearby 14th-mag star [YOS04]. Nov. 17.08: nearby field stars checked via Digitized Sky Survey [GON05]. Nov. 17.08 and 2008 Jan. 27.93: comp.-star mags taken from Henden photometry near U Gem [GON05]. Dec. 8.70 and 9.74: fairly bright, clearly visible 2008 Jan. 4.49: near a star, but well visible [YOS04].

◊ *Comet C/2006 VZ₁₃ (LINEAR)* \Rightarrow 2007 June 19.98 and July 8.89: *Guide 8.0* software used for comp.-star mags [MAJ01]. June 22.94, July 5.90, 7.86, 13.92, 15.90, 16.93, 17.91, 20.88, 23.92, and 25.86: *Guide 7.0* software used for comp.-star mags [SAN07]. July 7.94, 10.87, and 20.92: *Guide 8.0* software used for comp.-star mags [SZA]. July 11.95: *Guide 8.0* software used for comp.-star mags [TOT03].

◊ *Comet C/2006 W3 (Christensen)* \Rightarrow 2007 Nov. 3.51: **Guide 8.0** software used for comp.-star mags; $B-V$ values of comp. stars were +0.44, +0.48, and +0.66 [YOS02]. Dec. 4.97: nearby field stars checked via Digitized Sky Survey; motion checked during a 90-min period; comp.-star mags taken from Henden photometry near BY Cam; mountain location, very clear sky [GON05]. Dec. 8.67: "unexpectedly bright; easily visible w/ an excellent clear sky" [YOS04]. 2008 Jan. 4.52: near a star [YOS04].

◊ *Comet C/2007 E1 (Garradd)* \Rightarrow 2007 Apr. 7.95, 8.95, 12.82, and 13.85: *Guide 7.0* software used for comp.-star mags [SAN07]. Apr. 13.81: *Guide 8.0* software used for comp.-star mags [MAJ01 and NAG09].

◇ *Comet C/2007 E2 (Lovejoy)* ⇒ 2007 Apr. 4.81: low alt.; w/ 25-cm f/5 L + CCD, total mag 9.8 (ref: Tycho-2 cat.), coma dia. 3'.5, no tail; astrometric obs. contributed to Minor Planet Center [KAD02]. Apr. 14.08, 27.92, May 9.85, and 12.89: *Guide 7.0* software used for comp.-star mags [SAN07]. Apr. 16.08: *Guide 8.0* software used for comp.-star mags [NAG09]. Apr. 17.04, 20.04, May 7.87, and 12.88: *Guide 7.0* software used for comp.-star mags [MAJ01]. Apr. 26.95 and May 17.02: *Guide 8.0* software used for comp.-star mags [TOT03]. Apr. 27.04: *Guide 7.0* software used for comp.-star mags [SAR02].

◇ *Comet C/2007 F1 (LONEOS)* ⇒ 2007 Sept. 19.82: w/ 25-cm f/5 L + CCD, in twilight and at low alt., through clouds; total mag ≈ 10.6 , coma dia. 1'.5, no tail; astrometric obs. contributed to Minor Planet Center [KAD02]. Oct. 4.78: coma elongated in p.a. 350° [BUS01]. Oct. 13.72, 19.73, and 21.73: very low; light pollution [HOR03]. Oct. 15.73 and 19.72: low; dusk [HOR02]. Oct. 15.73: very low [HOR03]. Oct. 15.73: low alt.; twilight [SRB]. Oct. 18.74: only faintly seen due to twilight (solar alt. $\sim -13^\circ$) and light pollution [GRA04]. Nov. 6.42: tail very faint and indefinite; comet somewhat brighter with Swan-band filter [SEA]. Nov. 6.95: comp. stars have $V = 6.58$ ($B-V = +0.10$), 6.90 (+0.07), and 6.72 (+0.67) [GOI]. Nov. 8.94: comp. stars have $V = 6.64$ ($B-V = +0.14$) and 6.90 (+0.33) [AMO01]. Nov. 9.44: "comet in outburst!; tail distinct and impressive; first 40' very obvious" [SEA]. Nov. 9.94: comp. stars have $V = 7.85$ ($B-V = +0.04$) and 8.32 (+0.39) [GOI]. Nov. 9.95: clouds interfering; comet alt. $\sim 8^\circ$ [SOU01]. Nov. 10.43: "comet and tail dramatically fainter than on previous evening; in 25.4-cm L (71 \times , 114 \times), no definite central cond., but the brighter center of coma may have been slightly elongated \perp to axis of tail; there appeared to be a slighter brighter 'spine' in tail" [SEA]. Nov. 10.94: clouds interfering [SOU01]. Nov. 10.95: comp. stars have $V = 7.40$ ($B-V = +0.46$) and 8.32 (+0.11) [GOI]. Nov. 15.96: comp. stars have $V = 7.87$ ($B-V = +0.09$) and 8.06 (+0.05) [AMO01]. Nov. 17.95: comp. stars have $V = 8.14$ ($B-V = +0.50$) and 8.42 (+0.15) [GOI]. Nov. 19.96: comp. stars have $V = 8.77$ ($B-V = +0.65$) and 9.10 (+0.46); moonlight [AMO01]. Nov. 20.96: comp. stars have $V = 8.18$ ($B-V = +0.35$) and 8.55 (+0.07) [GOI]. Nov. 20.96 and 23.94: moonlight interference [GOI]. Nov. 23.94: comp. stars have $V = 8.96$ ($B-V = -0.02$) and 9.04 (+0.22) [GOI]. Nov. 27.96: comp. stars have $V = 9.50$ ($B-V = +0.36$) and 9.27 (+0.27) [GOI]. Nov. 28.95: comp. stars have $V = 9.58$ ($B-V = +0.60$) and 9.27 (+0.27) [GOI]. Nov. 30.96: comp. stars have $V = 8.98$ ($B-V = +0.27$) and 9.87 (+0.12) [AMO01]. Dec. 1.96: comp. stars have $V = 9.78$ ($B-V = +0.63$) and 10.38 (+0.07) [GOI].

◇ *Comet P/2007 H1 (McNaught)* ⇒ 2007 Nov. 3.45: "difficult to see due to the hazy sky; perhaps the comet has faded" [YOS04]. Nov. 3.46: *Guide 8.0* software used for comp.-star mags; $B-V$ values of comp. stars were +0.49, +0.50, and +0.67 [YOS02]. Nov. 3.91: comp.-star mags taken from Henden photometry near WW Cet [GON05]. Nov. 30.49: *Guide 8.0* software used for comp.-star mags; comp. star has $B-V = +0.49$ [TSU02]. Dec. 8.48 and 9.45: "faint, but still easy to see" [YOS04].

◇ *Comet C/2007 P1 (McNaught)* ⇒ 2007 Aug. 14.82: five stacked 60-sec astrometric CCD images obtained w/ 50-cm Uppsala D show a very diffuse coma $\sim 20''$ across w/ total mag 18, extended in p.a. 340° [R. H. McNaught, Siding Spring Observatory, Australia].

◇ *Comet C/2007 Q3 (Siding Spring)* ⇒ 2007 Dec. 28.54: astrometric CCD images obtained w/ 50-cm Uppsala D show a 15'' tail in p.a. 315° and total mag 16.6 [R. H. McNaught, Siding Spring Observatory, Australia].

◇ *Comet C/2007 T1 (McNaught)* ⇒ 2007 Nov. 6.43: comet somewhat enhanced through Swan-band filter [SEA]. Nov. 9.96: comp. stars have $V = 9.97$ ($B-V = +0.04$) and 10.26 (+0.39) [GOI]. Nov. 17.94: comp. stars have $V = 9.63$ ($B-V = +0.51$) and 9.79 (+0.51) [GOI]. Dec. 29.32 and 30.32: moonlight interference [GOI]. Dec. 29.32: comp. stars have $V = 9.21$ ($B-V = +0.10$) and 8.66 (+0.82) [GOI]. Dec. 30.32: comp. stars have $V = 9.15$ ($B-V = +0.38$) and 8.91 (+0.09) [GOI]. 2008 Jan. 6.31: comp. stars have $V = 7.26$ ($B-V = +0.37$) and 8.76 (+1.03) [AMO01]. Jan. 7.30 and 9.26: comp. stars have $V = 7.82$ ($B-V = +0.18$) and 8.77 (+0.31) [AMO01]. Jan. 8.31: comp. stars have $V = 8.63$ ($B-V = +0.41$) and 7.82 (+0.18) [GOI]. Jan. 10.30: comp. stars have $V = 8.14$ ($B-V = +0.24$) and 9.14 (+0.38) [GOI]. Jan. 28.03: comp. stars have $V = 8.54$ ($B-V = +0.08$) and 9.85 (+0.41) [AMO01]. Jan. 30.10: comp. stars have $V = 9.18$ ($B-V = +0.10$) and 8.65 (+0.34) [GOI].

◇ *Comet P/2007 T2 (Kowalski)* ⇒ 2007 Nov. 7.45: w/ 70-cm reflector + CCD, no discernible nucleus; object has a long, narrow and evenly intense coma [G. Hug, Eskridge, KS, U.S.A.].

◇ *Comet P/2007 V1 (Larson)* ⇒ 2007 Dec. 26.56: *Guide 8.0* software used for comp.-star mags; comp. star has $B-V = +0.90$ [TSU02].

◇ *Comet C/2007 W1 (Boattini)* ⇒ 2007 Dec. 9.84: *Guide 8.0* software used for comp.-star mags; $B-V$ values of comp. stars were +0.56, +0.58, and +0.73 [YOS02]. 2008 Jan. 5.16: drop-shaped coma; short, straight tail [BAR06].

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ICQ Website Notes

In addition to posting all of the tabulated *ICQ* data now at the *ICQ* website, we are posting more and more articles and other items that appear in this printed version. Note also that there is a webpage devoted to comet 17P/Holmes with numerous images posted there, including scanned images of photographs taken E. Barnard during the comet's 1892 outburst, which show a remarkable similarity to the comet's morphology at its 2007 outburst — indicating that the same process causing the outbursting is at work over more than a century. — *Ed.*