Cassiopeia

This prominent group contains at least two dozen open clusters that are visible in amateur instruments; the total found photographically is over fifty. The center of the constellation culminates at midnight about 11 October.

eg I 10 ***dimen. 5′.1 × 4′.3*** ***V = 10.3*** ***sfc. br. 13.5***
This member of the Local Group, though heavily obscured by the Milky Way, is nonetheless faintly visible in 15 cm. It appears as a diffuse unconcentrated patch elongated SE-NW, lying N of a triangle of mag. 9 stars. A faint star is visible on the W edge. With 30 cm it forms a barely concentrated granular patch in a field rich with faint stars. The brightest part lies between the mag. 13.5 star on the W and a mag. 14.5 star 45″ E. The galaxy has no distinct nucleus but is speckled with nonstellar spots. Overall the halo extends to perhaps 4′ × 2′. Photographs show that the fainter star on the E side may be an HII region.

oc 103 ***diam. 5′*** ***V = 9.8*** ***stars 88***
Appearing elongated in 25 cm, this cluster is 4′ × 2′ in pa 45°. A total of 16 stars is visible, including two mag. 12 stars on the NE end. An arm of stars curves E and S from the center of the cluster. 30 cm shows a fuzzy spot 4′.5 diameter containing 25 stars with a string of stars extending SW from the center. Some unresolved haze is associated, particularly with the NE side.

oc 129 ***diam. 21′*** ***V = 6.5*** ***stars 193***
This cluster is visible in 6 cm as a few scattered mag. 9 stars with some faint stars associated, but it is not distinctive as a cluster. 25 cm shows an unconcentrated assemblage whose stars have a wide range of brightness. About 80 cluster members are visible in a 20′ area, including a triangle of mag. 10 stars in the center. 30 cm shows about 50 stars loosely spread in a 12′–15′ area, with the brightest ones on the S.

oc 133 ***diam. 7′*** ***mag. 9.4p*** ***stars 5***
oc King 14 ***diam. 7′*** ***V = 8.5*** ***stars 18***
25 cm shows oc King 14 as a hazy patch about 10′ diameter with a few stars resolved. 30 cm reveals 25 stars in a 7′–8′ area. Five brighter mag. 10.5–12 stars are in a N-S line on the E side. There is a bright star near the center, and some fainter stars appear on the NW side. This cluster is much more conspicuous than oc 133, which is only an arc of brighter stars about 15′ NNW. oc 146, *q.v.*, lies 15′ NE.

oc 136 ***diam. 1′.2*** ***mag.*** ***stars 20***
In 25 cm this cluster appears as a hazy patch at 50×. At 200×, half a dozen mag. 13 stars are visible in a 2′ diameter with some haziness. 30 cm shows the cluster 6′ NE of a reddish mag. 9.5 star with a mag. 10.5 companion 30″ S. The cluster is hazy, with ten very faint stars resolved. The stars are brighter on the NE and SW sides, and outliers trail SE to 2′ diameter.

oc 146 ***diam. 7′*** ***V = 8.4*** ***stars 134***
25 cm shows this cluster to be similar in appearance to oc King 14, *cf.*, 15′ SW. It is 10′ diameter with about two dozen stars resolved over a hazy background. 30 cm shows about 20 stars in a 6′ area. Just SE of center is a close equal pair (ADS 460: 10.0,10.0; 6″.8; 223°).

eg 147 ***dimen. 13′ × 8′.1*** ***V = 9.5*** ***sfc. br. 14.5***
This galaxy has exceptionally low surface brightness and is difficult to see in 30 cm. At 150×, the halo is 3′ × 2′, elongated in pa 30°. A faint star is visible on the N end of the core. At 225×, which shows only the core, some other faint stars are visible nearby.

eg 185 ***dimen. 11′ × 9′.8*** ***V = 9.2*** ***sfc. br. 14.3***
6 cm will show this galaxy as a moderately faint and weakly concentrated circular spot. Bright field stars lie W and NE. In 15 cm the halo seems elongated E-W and up to 4′ long. The core is 1′ diameter, and the E edge of the halo appears granular. In 25 cm the galaxy is circular, 5′ diameter, and looks like an unresolved globular cluster. A very faint stellar nucleus is visible, and a star lies on the NW edge. In 30 cm it is about 2′.25 diameter with a broad, even concentration to a 1′.25 core. Several faint stars are visible nearby.

oc 189 ***diam. 3′.7*** ***V = 8.8*** ***stars 90***
In 25 cm this cluster is poorly concentrated, with 20 stars within 8′ diameter. Framing the group is a 4′ rectangle of mag. 10.5–11 stars. The easternmost star in the rectangle is a pair (h1043: 11.6,12.7; 11″; 173°).

oc Stock 24 ***diam. 4′.0*** ***V = 8.8*** ***stars 180***
oc 225 ***diam. 12′*** ***V = 7.0*** ***stars 76***
Easily identifiable in 6 cm, oc 225 is nevertheless not a conspicuous object. A string of five mag. 9.5 stars aligned roughly N-S is visible on the E side. 25 cm shows a very loose group 16′ across with 20 stars down to mag. 13.5. 30 cm reveals 30 stars in a 20′ area elongated E-W. An interesting region lies 40′ W, containing a compact group of stars on its N side: this is Stock 24.

eg 278 ***dimen. 2′.2 × 2′.1*** ***V = 10.9*** ***sfc. br. 12.3***
This galaxy is barely visible in 6 cm, 3′ S of a mag. 8 star. It appears small, but nonstellar at 100×. In 15 cm it is moderately bright and best viewed at medium power. The halo is 1′ diameter, irregularly round, with a stellar nucleus. 25 cm shows a bright and concentrated object. The halo is 1′.5 diameter and brightens to a well-defined core and stellar nucleus. Viewed in 30 cm, it is 1′.2 diameter and broadly concentrated to a faint stellar nucleus.

oc-gn 281 ***diam. 4′.0*** ***mag. 7.4p*** ***stars***
dimen. 35′ × 30′
6 cm will show this nebula as a fairly low surface brightness glow, but no concentration of stars is visible in the area. In 15 cm the nebula is about 10′–12′ across and has four associated stars; the central star is a close triple at 100×. The haze extends to about 15′ in 25 cm; in 30 cm the nebula breaks into dissociated parts. Some nebulosity is visible around the central triplet and extends 1′ SW to a mag. 11.5 pair (13″; 310°). More nebulosity is visible associated with stars about 3′.5 E of the trio, and other faint patches lie SE. About 10 stars lie in a 2′ area around the central group, which is actually a quadruple (ADS 719): the two brightest stars are separated by 3″.9 in pa 134°, while a third member is 9″ S. The brightest star has a close companion 1″.5 E that is two magnitudes fainter.

oc 366 ***diam. 3′.0*** ***mag.*** ***stars 30***
In 25 cm this cluster is 2′ diameter, lying in the midst of a blank region of the Milky Way. Eleven stars are visible in pairs and triplets.

oc 381 ***diam. 6′*** ***mag. 9.3p*** ***stars 50***
This is a nice cluster in 25 cm. It is moderately concentrated, about 10′ diameter, with 30 stars. On the N side is a triple star of unequal magnitudes (the two closest form Stein 185: 10.8,12.5; 8″.1; 129°). In 30 cm this cluster is relatively indistinct from the Milky Way, appearing as a clot of background stars of mag. 11.5 and fainter. About 40 stars are visible in an 8′ area, with a few strings.

oc 436 ***diam. 6′*** ***V = 8.8*** ***stars 49***
Located 40′ NW of oc 457, *q.v.*, this cluster appears as a small, high surface brightness spot in 6 cm. Only a few stars can be resolved. In 20 cm it is 5′ diameter, with about 30 stars of mag. 10 and fainter. 25 cm shows strings of stars extending to 10′ diameter from a central condensation. 30 cm shows a 4′.5 object with a knot of four stars N of center. oc 433 lies 80′ NNW.

oc 457 ***diam. 12′*** ***V = 6.4*** ***stars 204***
This is perhaps the most impressive of all the clusters in Cassiopeia. On the SE are $\phi^{1,2}$ Cassiopeiae (ADS 1073: V = 5.0,7.0; 134″; 231°), yellow and blue in color, which