

| Object   | Uranometria | Con | Type        | R.A.       | Dec.      | mv         | Size'     | Remarks (Abbreviations from Kemble's observations unless otherwise noted)   | List Notes |
|----------|-------------|-----|-------------|------------|-----------|------------|-----------|---|------------|
| NGC 188  | 1           | Cep | OC          | 00 47 30.0 | +85 15 30 | 8.1        | 15        | Bounded on the east and south by brighter stars. One of the oldest known OCs.   |            |
| Tr 1     | 29          | Cas | OC          | 01 35 42   | +61 17 00 | 8.1        | 3         | Charming tiny, boxlike group of stars set amid a rich starfield, use low power.   |            |
| IC 1851  | 29          | Cas | Double Star | 02 51 45.9 | +58 18 52 | 6.5 & 9.93 | na        | Kemble found a "diffuse nebular glow" with UHC filter and compared it to NGC 7023 and NGC 896.  |            |
| IC 342   | 16          | Cam | G-SBc       | 03 46 48.4 | +68 05 44 | 8.4        | 21.4x20.9 | "The Hidden Galaxy", barred spiral with a small bright core. Look for OC Be 10 2° S.  |            |
| NGC 1502 | 16          | Cam | OC          | 04 07 49.2 | +62 19 54 | 6.9        | 20        | Kemble's Cascade, a spurting of stardust from off-Milky Way, flows into this bright OC with many double stars.  |            |
| NGC 1961 | 16          | Cam | G-SBbc      | 05 42 03.9 | +69 22 43 | 11         | 4.5x3     | Small nucleus and low surface brightness makes spotting it a challenge.   |            |
| NGC 2146 | 6           | Cam | G-SBab-P    | 06 18 38.3 | +78 21 21 | 10.6       | 5.4x2.9   | Appears elongated and diffuse. Lies west of a neat little clustering of faint stars.  |            |
| NGC 2320 | 4           | Lyn | G-E4        | 07 05 41.9 | +58 34 51 | 11.9       | 1.4x.08   | Quite bright, surprisingly easy, a bright star lies 1' to the NE.   |            |
| NGC 2322 | 4           | Lyn | G-SBa       | 07 06 00.3 | +50 30 38 | 13.8       | 1.1x.04   | Faint. In the same low-power field as NGC 2320. Also look for NGCs 2321, 2322, 2326 & 2326A in 1/2-degree field.  |            |
| NGC 2602 | 26          | Lyn | G-S         | 08 35 04.3 | +52 49 53 | 14.7       | 0.3x0.2   | Easiest of three galaxies requiring a dark sky and patience. Observe with NGC 6203 and 2606 nearby. All extremely faint.  |            |
| NGC 2603 | 26          | Lyn | G-C         | 08 34 31.2 | +52 50 25 | 15.5       | 0.3x0.3   | Observe alongside NGCs 2602 and 2606.   |            |
| NGC 2606 | 26          | Lyn | G-Sbc       | 08 35 34.4 | +52 47 19 | 14.3       | 0.7x0.3   | Observe alongside NGCs 2602 and 2603.   |            |
| NGC 2715 | 6           | Cam | G-SBc       | 09 08 05.9 | +78 05 09 | 11.2       | 4.8x1.6   | Large, faint, elongated spiral located in a nice starfield.   |            |
| NGC 3183 | 5           | Dra | G-SBbc      | 10 21 48.6 | +74 10 38 | 11.9       | 2.3x1.4   | Large, oval, mottled with four or five faint, starlike points embedded in the galaxy.   |            |
| NGC 3172 | 1           | Umi | G-Sa        | 11 47 14.5 | +85 05 37 | 14.1       | 1.0x.7    | "Polarissima Borealis," most northerly bright galaxy. Small, faint, starlike nucleus. Use averted vision.   |            |
| NGC 3972 | 24          | Uma | G-SBbc      | 11 55 45.3 | +55 19 12 | 12.3       | 3.7x1     | An elongated glow rewards the persistent observer. Use averted vision.  |            |
| NGC 4157 | 37          | Uma | G-SBb       | 12 11 04.4 | +50 29 05 | 11.4       | 6.7x1.2   | Faint and elongated. Nicely nestled in a field of fairly bright stars.  |            |
| NGC 5308 | 23          | Uma | G-So        | 13 47 00.0 | +60 58 22 | 11.4       | 3.7x0.7   | Quite bright and easy to find with an almost starlike core. In a rich field using low power.  |            |
| NGC 5484 | 23          | Uma | G-E2        | 14 06 48.1 | +55 01 49 | 14.7       | 0.8x0.7   | An especially satisfying group of galaxies. Observe with NGC 5485 and 5486 nearby.  |            |
| NGC 5485 | 23          | Uma | G-So        | 14 07 11.4 | +55 00 05 | 11.4       | 2.3x1.9   | Quite remarkable! Observe alongside NGCs 5484 and 5486.   |            |
| NGC 5486 | 23          | Uma | G-Sm        | 14 07 24.9 | +55 06 11 | 13.2       | 1.5x0.9   | Extremely faint. Observe alongside NGCs 5484 and 5485.  |            |
| NGC 5909 | 4           | Umi | G-Sbc       | 15 11 27.9 | +75 23 04 | 13.8       | 1.1x0.5   | In the cup of Ursa Minor, just NE of $\beta$ Ursa Minoris. With 5912 makes a fine pair of galaxies.   |            |
| NGC 5912 | 4           | Umi | G-E-So      | 15 11 40.5 | +75 23 05 | 13.8       | 1.2x1.1   | Brighter with a star like core when compared to NGC 5909.   |            |
| NGC 6251 | 4           | Umi | G-E2        | 16 32 31.8 | +82 32 18 | 12.6       | 1.8x1.5   | Together with 6252 form a nice pair of galaxies.  |            |
| NGC 6252 | 4           | Umi | G-S         | 16 32 40.3 | +82 34 38 | 14.2       | 0.7x0.3   | Caught as the Moon was rising, the first 15th-magnitude galaxy Kemble observed.   |            |
| NGC 6543 | 11          | Dra | PN          | 17 58 33.4 | +66 38 01 | 8.1        | 0.33      | "Cat's Eye," one of the finest planetaries in the circumpolar sky. Sharp and contrasty with a greenish hue. [c* 11] Look for 14th n   |            |
| NGC 6654 | 3           | Dra | G-SBo-a     | 18 24 07.6 | +73 10 58 | 12         | 2.6x2.1   | Easy to identify, appears round and bright. Look for Kemble 2 nearby.   |            |
| NGC 6826 | 33          | Cyg | PN          | 19 44 48.2 | +50 31 32 | 9          | 0.6       | E and in same field as 16 Cygni the "Blinking Planetary" looks like a bluish star with direct vision, nebula pops with averted vision. [c* 10.6]                              |            |
| NGC 6939 | 20          | Cep | OC          | 20 31 30.0 | +60 39 42 | 7.8        | 10        | A tight little cluster of faint stars. Look for NGC 6946 the "Fireworks" galaxy nearby.   |            |
| NGC 7023 | 9           | Cep | RN          | 21 01 35.5 | +68 10 10 | 7          | 10x8      | This reflection nebula is a gem best seen without a filter.   |            |
| IC 1434  | 19          | Lac | OC          | 22 10 30.0 | +50 50 00 | 9          | 7         | Nice cluster with many faint stars in two arms. A "mini Kemble's Cascade" according to modern obs.  |            |
| NGC 7510 | 18          | Cep | OC          | 23 11 04.2 | +60 34 08 | 7.9        | 7         | Appearing like a swarm of glowing gnats flying in a V-formation, a gorgeous cluster set off in a sea of black space with a hint of fainter star dust. Look for NGC 7538 to N. |            |

#### Supplemental Objects reflecting Kemble's voluminous Observations

|                |    |      |        |             |           |       |           |   |  |
|----------------|----|------|--------|-------------|-----------|-------|-----------|---|--|
| Ced 214        | 8  | Cas  | EN     | 00 05 50.79 | +67 17 23 | 10    | 50x40     | Very large nebulous complex south of NGC 7822, contains tiny sparkling OC Berk 59. Used sweeping to detect if fields are restrictive. |  |
| Ling1          | 8  | Cas  | Ast    | 00 20 00    | +62 20 00 | na    | 32        | Lovely, large, looping cluster of stars. Well isolated as a group when scope is moved S of St20. A lovely gift from Alister.          |  |
| King 14        | 8  | Cas  | OC     | 00 33 18.64 | +63 16 19 | 8.5   | 8         | Forms a triangle with OCs NGCs 133 & 146 in same low power field. Row of brighter stars on E edge. Many doubles in this cluster.      |  |
| NGC 896        | 29 | Cass | EN     | 02 21 28.4  | +63 46 16 | na    | 27x13     | Easy patch of nebulosity E of long chain of stars. Use UHC filter + low power. Kemble compared NGC 7023 & IC 1851 to NGC 896.         |  |
| Cz8            | 29 | Per  | OC     | 02 33.00    | +58 46 00 | 9.7   | 7         | Small Triangle in a beautiful field. 3.5-degree NE of the Perseus Double Cluster. Look for King 4 nearby.                             |  |
| Stock 23       | 28 | Cam  | OC     | 03 17 57.6  | +60 10 53 | 6.5   | 29        | Mentioned in S&T Dec. 80' as part of his Kemble's Cascade Correspondence, at the time an uncharted clusters Kemble swept up.          |  |
| Pal 1          | 7  | Cep  | GC     | 03 36 37.0  | +79 39 18 | 13    | 2.8       | Soft glow suspected with averted vision, confirmed on 2nd observation. Kemble observed all Palomar Clusters.                          |  |
| Kemble 3       | 17 | Cas  | Ast    | 03 28 00    | +72 00 00 | na    | 1.5"x0.5" | Kemble's Kite. Star V805 contained within.  |  |
| Kemble 1       | 16 | Cam  | Ast    | 03 59 00    | +63 08 00 | na    | 2.5"      | Kemble's Stream Cascade (in his notes he edited "Kemble Stream" years later to match the name Houston Jones gave it.)                 |  |
| UGC3574        | 27 | Lyn  | G-S    | 06 55 03.07 | +57 09 01 | 13.81 | 1.5x1.4   | Fairly large, uniform, nestled in a sort of trapezium.  |  |
| Jones-Embersor | 26 | Lyn  | PN     | 07 59 34.71 | +53 21 45 | 12    | 6.8x6     | Clear, round glow, brighter on NW. 2 bright arcs seen even without UHC filter.  |  |
| Markarian 205  | 5  | Dra  | QSO    | 12 21 43.85 | +75 19 21 | 12.8  | Stellar   | Quasar appears as momentary 14.5 m spec below, but unassociated with, NGC 4319. Look for NGCs 4219 & 4386 nearby.                     |  |
| NGC 5875       | 22 | Boo  | G-Sb   | 15 09 13.10 | +52 31 41 | 12.4  | 2.3x1.2   | Large, diffuse, elongated.  |  |
| Draco Dwarf    | 21 | Dra  | G-dSph | 17 20 34.97 | +57 54 23 | 11.25 | 36.8x29.1 | Quite easy; very large & diffuse, easily seen by sweeping. Part of our local group of galaxies.                                       |  |
| NGC 6643       | 3  | Dra  | G-Sc   | 18 19 45.6  | +74 34 06 | 11.1  | 3.7x1.8   | Large, faint, elongated with brighter core and by a nice chain of stars.  |  |
| Kemble 2       | 10 | Dra  | Ast    | 18 35 00    | +72 25 00 | 5.6   | 20x10     | Mini-Cassiopeia.  |  |
| CR471          | 9  | Cep  | OC     | 22 07 29.97 | +72 06 28 | na    | 130       | Very large, bright OC in Cep OB1 association. Look for Barnard 175 on S. edge.  |  |
| Reiland 1      | 18 | Cep  | OC/EN  | 23 05 40.23 | +60 11 09 | na    | 1         | Small nebulous patch marked as Bergeron 1 in Uranometria. Look for IC 1470 to the north. [c* 16.0]                                    |  |

#### Table Notes:

- Updated NGC/IC data from Wolfgang Steinicke
- NGC/IC Source: [www.klima-luft.de/steinicke/ngcic/ngcic\\_e.htm](http://www.klima-luft.de/steinicke/ngcic/ngcic_e.htm)
- Remarks are from Kemble's articles, personal logs and correspondence.
- Supplemental Objects are suggested in an attempt to create a more comprehensive list reflecting his observations post '87. Selections were based on multiple observations, notes, sketches, or correspondence indicating some additional interest by Kemble.
- The "nearby" targets in the Remarks column are suggested because they were observed and noted by Kemble as such with the exception of B175 near CR471 and "Mini Kemble's Cascade" in IC 1434.