The Amateur Astronomer's Guide to the Deep-Sky Catalogs, by Jerry D. Cavin (Springer, Heidelberg), 2012. Pp. 390, 23·5 × 15·5 cm. Price £35·99/$39·95/€39·95 (paperback; ISBN 978 1 4614 0655 6).

The collection of astronomical catalogues has a long tradition. Some may remember Dixon's monumental 'Master List' of non-stellar objects. However, in amateur astronomy, especially where deep-sky objects are concerned, there is little literature. Now the American amateur Jerry Cavin has tried to fill the gap, presenting a "catalogue of catalogues", which is announced as a "complete guide to the heavenly bodie [*sic*]". The author has selected 12 "historical deep space sky catalogues" (note the strange term). Moreover, he wants to provide the reader with "historical information" about their origin and makers. Does the book achieve these ambitious aims?

A first browsing shows an odd proportion between text and data: 90% of the 368 pages contain tables (the NGC alone covers 175). This could indicate a great amount of work by the author, but a detailed inspection unmasks a rigorous 'copy & paste' action. Is this really a problem? Yes, because of two facts: (*i*) the external data were adopted with no criticism and (*ii*) the necessary formatting for a homogenous presentation in a book has been strongly neglected. The result is a hotchpotch of unusable information.

The first three catalogues — from Ptolemy (*Almagest*), Brahe, and Hevelius — list single stars and cover 100 pages. What should an observation of these 'deep-sky objects' yield? Many stars appear in all three tables, which is not obvious as only the *Almagest* offers modern designations. They may look cryptic ("7Nu 2CMa", "41Ups4Eri"), but the really hard stuff is the unexplained column "HR number". It took me some time to clear up all its mysteries. The *Bright Star Catalogue* with 9110 entries is meant: for instance, "49Mu Tau" is listed as "HR 1,320" (note the comma!). However, "38Nu Tau" bears no number, though it is actually HR 1251. There are four numbers well beyond 9110: "HR 10,869", "HR 12,632", "HR 15,139", and "HR 16,475", three of which have a visual magnitude of 8! Fortunately, ecliptic coordinates for 137 AD are given (not quite user-friendly for amateur observers of today). A little calculation yielded an interesting result: the mysterious objects are the Double Cluster h + χ Persei (NGC 869/884), Praesepe (NGC 2632), the globular cluster ω Centauri (NGC 5139), and the open cluster M 7 (NGC 6475). What about the high HR numbers? Compare the NGC- and HR-number and omit the first one or two digits of the latter — so much for that! The next table, presenting Christian Mayer's double stars, struggles with the Latin genitive, *e.g.*, "24 Canceri", "λ Arietus", "τ 94 Taurus". Units for distance and position angle are missing and the important designation "WDS" is not explained (it is actually the *Washington Double Star Catalogue*).

Really problematic are the very deep-sky catalogues, associated with the names of Al-Sufi, Messier, Bode, Herschel (page heading: "Alexander Herschel"), Dreyer, Arp, and Moore. The Arp catalogue (which does not contain "338 galaxies"!) and Moore's *Caldwell Catalogue* are barely 'historic'. Surprisingly, the Al-Sufi table is modern too: Cavin presents 122 known objects (M 38 appears twice and the sorting order remains a secret). From these, the Persian astronomer has mentioned only four in the 10th Century (curiously the Large Magellanic Cloud is missing). Dreyer's *New General Catalogue* — called "New General Catalogue of nebula [*sic*] and clusters" — is oddly arranged by constellation, making it difficult to find a certain object. Completely ignored are the many identities (*e.g.*, NGC 6 = NGC 20). In theses cases the positions match, whereas magnitudes and sizes often do not. There are even discrepancies

between catalogues, like in the cases of M 82 (NGC 3034) and M 110 (NGC 205), which is called "Part of M 31" in the Messier table. The obscure galaxy list "Hershel 3" [*sic*] offers no constellation for nearly half its entries and for some they are wrong (NGC 16 in Pegasus, for instance, is placed in Andromeda). Generally, the author struggles with constellations. One finds, *e.g.*, "Boö", "Arg", or "Atn". The last two appear in the Hevelius table and might be Argo and Antinuous, respectively; there is no mention in the constellation list (Appendix A).

In all, the catalogue selection is unsatisfactory and the tables brim over with typos ("Triffid Nebula", "Leo Mor"), content-related errors, and format problems. The presented information is often incorrect, inconsistent, irrelevant, or just strange (*e.g.*, unexplained types "NbDF", "GxyCld", "144Glx"). Relevant data is missing. The internet offers much better data.

The sparse text cannot relieve this harsh verdict. It too is full of errors, omissions, and inconsistencies. For instance, biographical data (year of birth/death) are missing or names are wrong ("M. Schjellerup", "Knoble"); the author confuses the 3rd and 4th Earl of Rosse and the index, where a system is not apparent, gives "Rosse, L.". Wrong names appearing in the text (*e.g.*, "Hershel", "Voroncoc-Velyaminov") are copied here. Also the appendix, the references (where important books like Stoyan's *Atlas of Messier Objects* are missing), and the few figures engender criticism. William Herschel is shown looking through a large refractor and Johann Elert Bode appears with his damaged left eye, while the text speaks of his right eye.

It is sad, but I'm unable to write anything positive about Cavin's book. Ironically, in a single volume the book does come up with his claim to be an "amateur astronomer's guide": it is amateurishly made! Not only can the author be blamed, but also Springer. There is no sign that a suitable proofreading had taken place — though it is possible to alter the content in order to get a good result. But it seems that neither the author nor the publisher have the necessary knowledge and concept to produce such a book. This is also true for other Springer publications, regardless if they belong to *Patrick Moore's Practical Astronomy Series* or other series. Conclusion: because the advertised main feature of the book — the "catalogue of catalogues" — has proved to be useless, it loses its right to exist. It's a sloppy work and not worth the money. I cannot see who will profit from the book. A good chance to fill a gap was missed. — WOLFGANG STEINICKE.