

Interactive comment on “Early ship-based upper-air data and comparison with the Twentieth Century Reanalysis” by S. Brönnimann et al.

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"Abstract line 20; "form" should be "form"" Thanks.

"Section 2.1.1 line 22; mention in a footnote what a registering balloon is." Added (but in parenthesis rather than as a footnote).

"Section 2: Could you mention what the purposes (goals) of these early cruises were? Was it simply to collect new atmospheric datasets or did they have some specific purposes in mind?" The goal of the Planet cruise was the Bismarck Archipelago (at that time a German protectorate), where geodetic work was performed. On the cruise, oceanographic and atmospheric measurements were made. The goal of the MS Schwabenland cruise was to preserve German interests in Antarctica. We have added

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corresponding text.

"pg 2429, mention the time of day of launches at SMS Planet. Are radiation errors an issue for all sondes or were some launches at night?" It's almost exclusively daytime; this is now mentioned.

"pg 2429, line 14; cite some examples of other possible sources of systematic errors in T and P." We add "(e.g., due to calibration issues or processing of instrument reading)"

"pg 2429, what is the meaning of Neuschwabenland?" New Swabia - changed.

"pg 2429, line 20; "radiosonde ascents"" Changed.

"pg 2430, Is it necessary to show original German version of this note? Seems like the English translation would be enough." We think it scientifically more sound to quote the original language.

"pg 2433, It's unclear if surface pressure from the MS Schwabenland was used in 20CR." No, it was not. This is changed (see also comment by ref. 1)

"pg 2433, line 26; define NNR first time it is used." Changed (but at added a few lines further up).

"pg 2436, lines 17-18; It's unclear how "description of the data asserts a high quality" has been inferred." This is from the German and translated quote - a reference to the quote is added.

"pg 2440, line 4; Can you expand on the comment "much more ship-based upper-air data" by describing how much more data is actually available. Can these data be used in a updated CR20 reanalysis?" We have added: "...which can be used in future reanalysis efforts, such as those of the ERA-CLIM project, which will develop the next long European reanalysis." It is too early to estimate the number of additional marine profiles that could be found. We just started to compile an inventory and there is no end in sight.

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