

Interactive comment on “Gridded Satellite (GridSat) GOES and CONUS data” by Kenneth R. Knapp and Scott L. Wilkins

Anonymous Referee #1

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Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-33> Gridded Satellite
(GridSat) GOES and CONUS data Kenneth R. Knapp and Scott L. Wilkins

General

This is a nice overview of a processed dataset to make access to historical GOES easier.

Technically, the legacy GOES is only the operational West satellite now, and will be replaced by the ABI by the time the paper is published. So, include some about the ABI, especially that it's on the Fixed Grid Format.

It turns out the line numbers started over on every page.

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Specific

Line 8. GOES-A was launched in 1975, so say mid-1970s. Line 19. Not just weather, but the E is GOES is environmental, so volcanoes, fires, smoke, SST, LST, etc. Line 22. Prins should be Purdom. Line 24. Move the sentence about GOES-16 to the end of the paragraph, since GOES-17 will be at 137W, not 135W. Line 26. GOES Satellite is redundant. (Should be consistent, e.g., the following line 23)

Line 4. Add a reference for McIDAS. Line 28. What operational schedule supplies 1min imagery from legacy GOES? I think none. <http://www.ospo.noaa.gov/Operations/GOES/west/srso.html> So, add that the 1min images are special research scans and add a reference to two for the SRSOR run from GOES-14 during parts of 2012 to 2016.

Line 8. I trust you mean all GOES Imager channels, eg, not sounder. If so, this should be stated. Line 17. Change navigate to navigated. Line 17. Digital numbers seems redundant. How about digital counts, since they are integers. Line 18. Do you convert to reflectance, or reflectance factor (eg, no correction for the cosine of the zenith angle). Line 28. This is confusing. How about: There is the equivalent of an extra satellite ...

Line 4. For completeness and clarity: There are generally about 120 GOES Imager scans per day; Line 5. How is optimal defined? Agreed that 60 and 15 min are reasonable cadences, but does that make them optimal? Line 11. Point out that an 18:00 UTC (not Z) image is the start time. Line 15. Are the delta times by line or by pixel along a line? Line 20. Missing 2 commas in NESDIS. Line 27. Need to define a reference temperature for a nedt. Line 27. There was an improvement in nedt between the early GOES (8 etc) and the 13-15 series. This should be noted. Line 30. So was the necessary boosting employed? I assume so, but this is un-clear. Is this a calibration, or an adhoc boost?

Line 4. What about the east-west over-sampling? Stated another way, were 3x3 original pixels used, or something else? Line 12. Can you do 15 min data from GOES-1

thru 7? Wasn't it more like every 30 min? Line 14. The ABI full disk scans are at least every 15 min, not 30 min. Line 15. Might note GOES-17 as well. Line 21. Increasing the spatial resolution may decrease the number of users, but I don't see how this is decreasing the usefulness. Again, with over-sampling the east-west ground sample distance is finer than 1 km. Line 25. Or somewhere, need to remind the readers about parallax. Line 26. What about stray light in the data?

Line 3. Consider readme files at the top level of the URLs. Line 8. Weren't there 2 periods, during GOES-13 outages, that GOES-14 was the operational satellite? This should be noted. Line 27. Where are the central wavelengths from? Channel 1 should have more precision. Channel 2 should be 3.9, not 3.75, channel 3 changed, during the series and hence it's just 6.7 um.

Line 14. Many users may not know what N-P are, just stick with the numbers to be consistent.

Figure 1. Note the projection.

Figure 2. This reviewer assumes a square root function has been applied to channel 1. If this is the case, it should be noted. If it's not the case, explain why the image seems so bright. Describe the color scheme for band 3. What s/w was used? Mcidas? If so, please state, at least in the acknowledgements. Explain in the caption the central wavelengths.

Figure 3. Again, what is the projection.

Table 1. Aren't there other systems that can read AREA files? Given their flat structure?

Table 2. It's stated that your new datasets start in 1994, but it should be noted this is September. Are the water vapor bands from all the GOES remapped to 4km? It might be confusing to say you have 6 channels, when you only have 5 at a time.

Table 3 is of limited interest for a user. Yet, this reviewer took one look at 18Z on the first day of the dataset from 1994 and how much stripping, missing lines. This was reflected

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in artificially huge variance values. These type artifacts should be noted somewhere.

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