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## Comment from Watts, Gordon

Posted by the **National Oceanic and Atmospheric Administration** on Jul 4, 2024[Docket \(/docket/NOAA-NWS-2024-0069\)](/docket/NOAA-NWS-2024-0069)[/ Document \(NOAA-NWS-2024-0069-0001\) \(/document/NOAA-NWS-2024-0069-0001\)](/document/NOAA-NWS-2024-0069-0001) / [Comment](#)

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I'm an interested party as a researcher & author of a popular Solar Flare paper. Plus, like others, I benefit if scales accurately describe how big is "big" re solar events threaten GPS, 911, Satellites, Power, & Internet.

My recommended Space Weather Scales (SWS) revisions:

First, I'd add extra orders of magnitude:

- \* Solar Radiation: S1-S6 (not just S5)
- \* Geomagnetic storm strength: G1-G6 (not just G5)
- \* Radio Blackout effects: R1-R6 (not just R5)
- \* Solar Flares as follows: A, B, C, M, X, Y & Z, each class being 10× stronger than the previous (Don't stop at X)

My reasoning: Just like there's talk of adding a Category 6 Hurricane to the scale (not just 1-5), likewise adding an extra order of magnitude here would clarify "very dangerous" versus "dangerous." For example, recent May 2024 solar events were G5 and hyped by news media to be a Carrington-like in size, but when it didn't knock us back into the ice age, scientists looked like "the little boy who cried wolf." Part of the reason we averted disaster was the same hype: We prepared. However, this was a "small" G5: Since we don't go higher, it's hard to distinguish between a Carrington-like event and a much less dangerous G5.

Likewise, we don't have Y-class flares, but just keep adding "bigger numbers" to X-flares, which SHOULD stop at 9! Why not have a Y or Z-class, which would communicate BETTER to the public how it's really bigger? A TRUE Carrington event might be G6 storm with a Y7 flare & not just a "big G5" with an X17 flare. How big is "big," Lol? We must be clear!

\* 5TH SCALE: Add a Dst scale, in nTesla units, which reflects how much a solar event causes earth's geomagnetic field to crunch.

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\* Bonus 6TH: Both polarity (with respect to Earth's magnetic field) AND (very important) angle of incidence (head on, parallel, in between?) should be included: Maximum interaction occurs when a CME hits perpendicular to Earth's field, but NO interaction if fields are parallel. That's why there's more slip by at the N & S poles where fields are parallel: Aurora are a result.

These 6 scales at a minimum. Maybe I'm missing one? But we mustn't add TOO many scales: It would dilute the message & get confusing. Make it easy to understand the TRUE magnitude of danger exists & in what way when communicating to nonscientist public.

Regarding my paper, I owe readers 3 apologies:

1) First, my paper's a few years old & doesn't include recent 2024 solar events.

2) Also, while I include an Exec Order by former Pres Trump, nonetheless, I didn't include Pres Biden's actions on the grid (he hadn't been elected yet). I should update it to include politicians from BOTH parties to underscore that infrastructure (incl grid) is Bipartisan (more accurately nonpartisan).

I credit both the late Dr. Peter Pry & my good friend, Glenn Rhoades, for their help. I know we shouldn't be partisan. But Glenn, in conversations we've had, has underscored the importance of avoiding distractions, like a partisan tone. (I don't think he'd mind me mentioning.) Secondly, when I was planning on calling lawmakers, I spoke with Dr. Pry: He emphasised I should be polite, professional, offer to craft legislation, help with press releases, & answer technical scientific questions. His guidance assured me I was on the right track: We're all affected by GPS, 911, Internet, Satellites, Power threats from: 1) solar events, 2) CYBER-HACKING, 3) EMP attacks & 4) severe weather.

3) My last problem was an unforced error: An en masse copy/paste to insert "long dashes" for appearance, damaged many URL hyperlinks. My apologies.

"Probability estimation of a catastrophic Carrington-like geomagnetic storm: Re-evaluated in new light of upcoming Maunder Minimum and recent decreases in geomagnetic field, after recent studies came to conflicting conclusions; Proposed solutions for citizens and lawmakers," by Gordon Wayne Watts, A.S. United Electronics Institute, Valedictorian; B.S. The Florida State University, Biological & Chemical Sciences, Double major w honours, ACADEMIA, Updated 10-5-2019

See attachments here--And:

[https://Academia.edu/40529432/WATTS\\_SolarFlarePAPER](https://Academia.edu/40529432/WATTS_SolarFlarePAPER)

<https://GordonWatts.com/SolarFlarePAPER.pdf>

<https://GordonWayneWatts.com/SolarFlarePAPER.pdf>

<https://Archive.vn/VnTI5>

<https://ContractWithAmerica2.com/SolarFlarePAPER.pdf>

<https://Web.Archive.org/web/20201017225700/https://gordonwatts.com/SolarFlarePAPER.pdf>

In keeping a nonpartisan tone, I point out that my flagship page, CONTRACT WITH AMERICA: PART II(r)(tm),

may sound like Newt Gingrich's project, which he used to elect Republicans (I needed an easy to remember name), but my project, by contrast, mandates we NOT support or oppose any party or candidate or politician, but rather be "issues based," the CHIEF issue being protecting the grid; related issues of cutting unnecessary spending (pork) to ensure funds exist to protect our grid via State/Fed legislation, advocacy, news & personal "off grid" preparation as a backstop.

Gordon

Attachments 2

 5\_SolarFlarePaper\_GordonWayneWatts\_PDF

[Download \(https://downloads.regulations.gov/NOAA-NWS-2024-0069-0044/attachment\\_1.pdf\)](https://downloads.regulations.gov/NOAA-NWS-2024-0069-0044/attachment_1.pdf)

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