

## Charlie's ITSP Podcast Info Template

### Questions for Dr. Olaf Storaasli!

Olaf Storaasli's **Title & company** name? **Dr, Oak Ridge National Lab (ORNL)\***

\*[Official ORNL Tour Guide](#) (retired ORNL Distinguished Research Scientist) & (35 years @**NASA Langley** as Structures Directorate Senior Research Engineer)

Olaf's **Twitter handle**? <https://twitter.com/olafva>

Olaf's company's Twitter handle? <https://twitter.com/ORNL>

Olaf's LinkedIn profile? [Olaf O. Storåsli](#)

Olaf's Facebook profile? [Olaf Storåsli](#)

Olaf's YouTube channel? [Olaf Storaasli](#)

Olaf's email address? [olaf@cox.net](mailto:olaf@cox.net) & [OlafTN@gmail.com](mailto:OlafTN@gmail.com)

(Or publisher/manager. Notify when episode published). [NASA web server has publications.](#)

Name or title of the first resource? **Website:** [OlafTN.com](#)

[Publications](#) [olaftn.com/AllPubs.html](#) (books +150 journal publications & research papers)

What is the **un-gated link** to the resource? [OlafTN.com](#)

Additional resources from Olaf? Wikipedia: [Olaf Storaasli](#) [en.wikipedia.org/wiki/Olaf\\_Storaasli](http://en.wikipedia.org/wiki/Olaf_Storaasli)

### Questions for you!

What is the suggested publication date? ASAP

What is the title for this episode? **Supercomputing Analysis for NASA Missions**

Suggest teaser for this episode? Consider this a 1st sentence [or 2] (max 200 chars) for this episode. To stand on its own to preview what listener hears AND ALSO begin a full story people can read in show notes which you'll provide in next step.

**From Growing up on the Canadian Prairies to enabling NASA's successful Viking Mars Landers, speeding Space Shuttle Analyses via fast Supercomputing algorithms & helping the U.S to lead the world in High-Performance Computing.**

Thanks for summary! Add more to show notes & continue story from teaser in previous step.

**Son of Pastor, Theologian & Seminary President, Olaf followed in the footsteps of his uncle (MIT EE), who with Nobel Physics Laureate Ernest Lawrence designed & built Calutrons to obtain Uranium 235 used to end WW2 & bring worldwide PEACE.**

**Olaf joined NASA Langley & introduced Finite Element (FE Technology to Structural Analysis just when Supercomputers enabled its practical use to solve complex analysis of aerospace vehicles. Olaf's research led NASA to develop NASTRAN (NASA Structural analysis Code. He used an early prototype to obtain accurate structural static, dynamic & frequency response analysis for the 1st successful Viking Mars landers in 1976. Altho a PhD ME, he envisioned computers would soon revolutionize Structural analysis. He led the way heading a hardware-software-systems-application R&D team who built the 1st NASA-developed Parallel Computer, the Finite-Element Machine (FEM). Following NASA FEM's lead, industry soon introduced numerous parallel computers which now dominate supercomputing. Olaf's General-Purpose Parallel Solver (GPS) evolved from FEM parallel processors to Cray YMP Supercomputers to speed Space Shuttle SRB analysis of a 54870 doe model from hours to seconds, a performance exceeding 1 Gigaflop for the 1st time prompting Cray to award Olaf & his team the GIGAFLOP Performance Award at a banquet at the 1989 Supercomputing Conference. The GPS solver was in great demand & used widely in aerospace, automotive, ship, building, acoustics, commercial finite element codes & in NASA's in-house analysis codes. Olaf led an R&D project to replace CPUs with Field-Programmable Gate Arrays (FPGAs) to achieve Hypercomputer speeds leading to a \$15M NASA Reconfigurable Space Computer project. Olaf was recruited by**

**ORNL's Future Technology Group to help R&D for future Supercomputers with industry, some incorporating FPGAs. Olaf's work at ORNL helps maintain U.S. worldwide dominance in Supercomputing, as NASA did previously. Olaf continues consulting, giving invited lectures & serves as one of two active official ORNL tour guides for college & high school students pursuing science & technology careers.**

*Additional notes may help production? Notes won't be published but used by us on the back end of production.*

**I can think of many additional items & hope update this. I'm sending this now for Charlie's initial feedback & comments, hoping to revise this as appropriate.**

*Any resources you want to share?*

1. [OlafTN.com](http://OlafTN.com): Website
2. [NASA Retirement: Lessons Learned](#)
3. [LAA Talk: Life After Langley: Supercomputing,](#)
4. [Saskatoon Star Phoenix](#): Hometown newspaper (Canada)
5. [Mars landing](#), [COVID19 vaccine trial volunteer](#) TV Clips
6. *Computing at the Speed of Thought* 10/04. Aerospace America Cover Issue