Modules for Experiments in Stellar Astrophysics (MESA)

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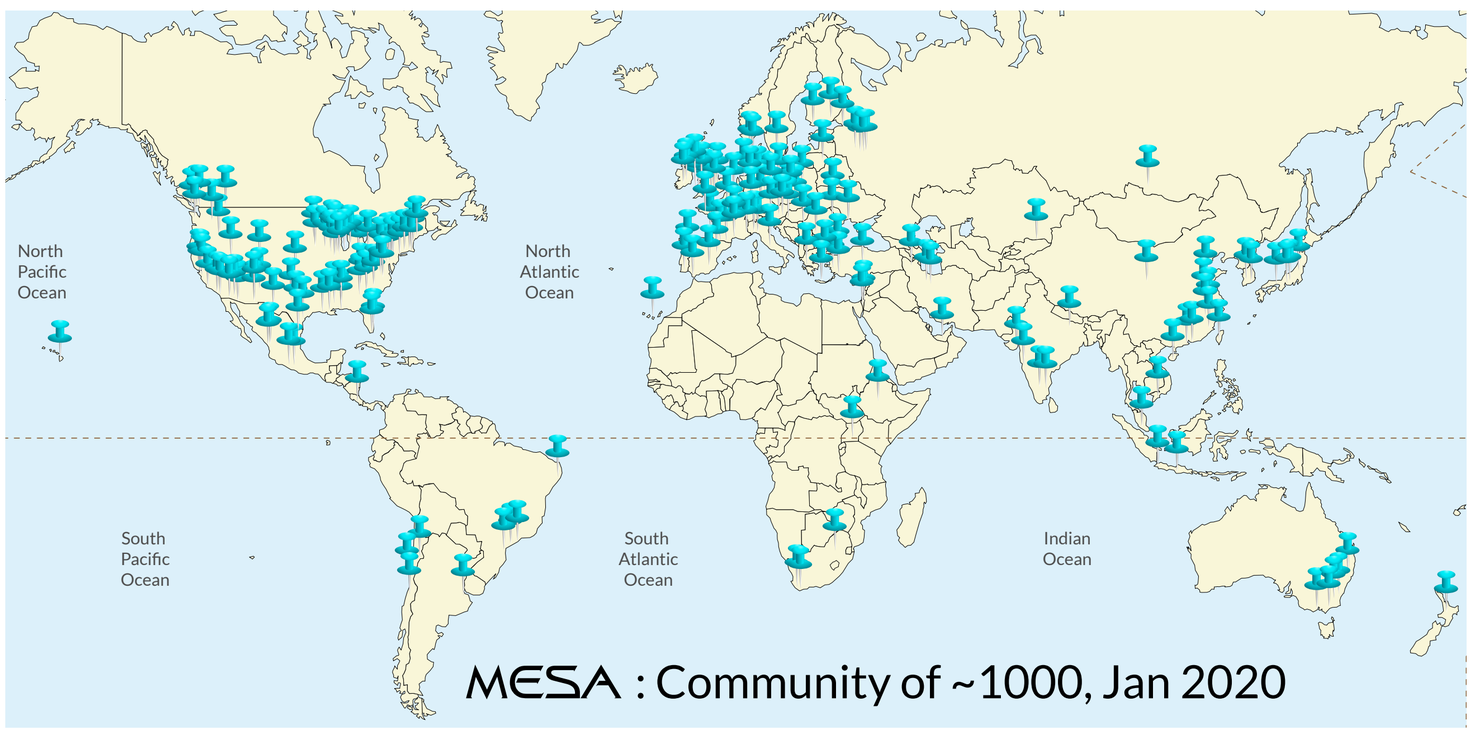
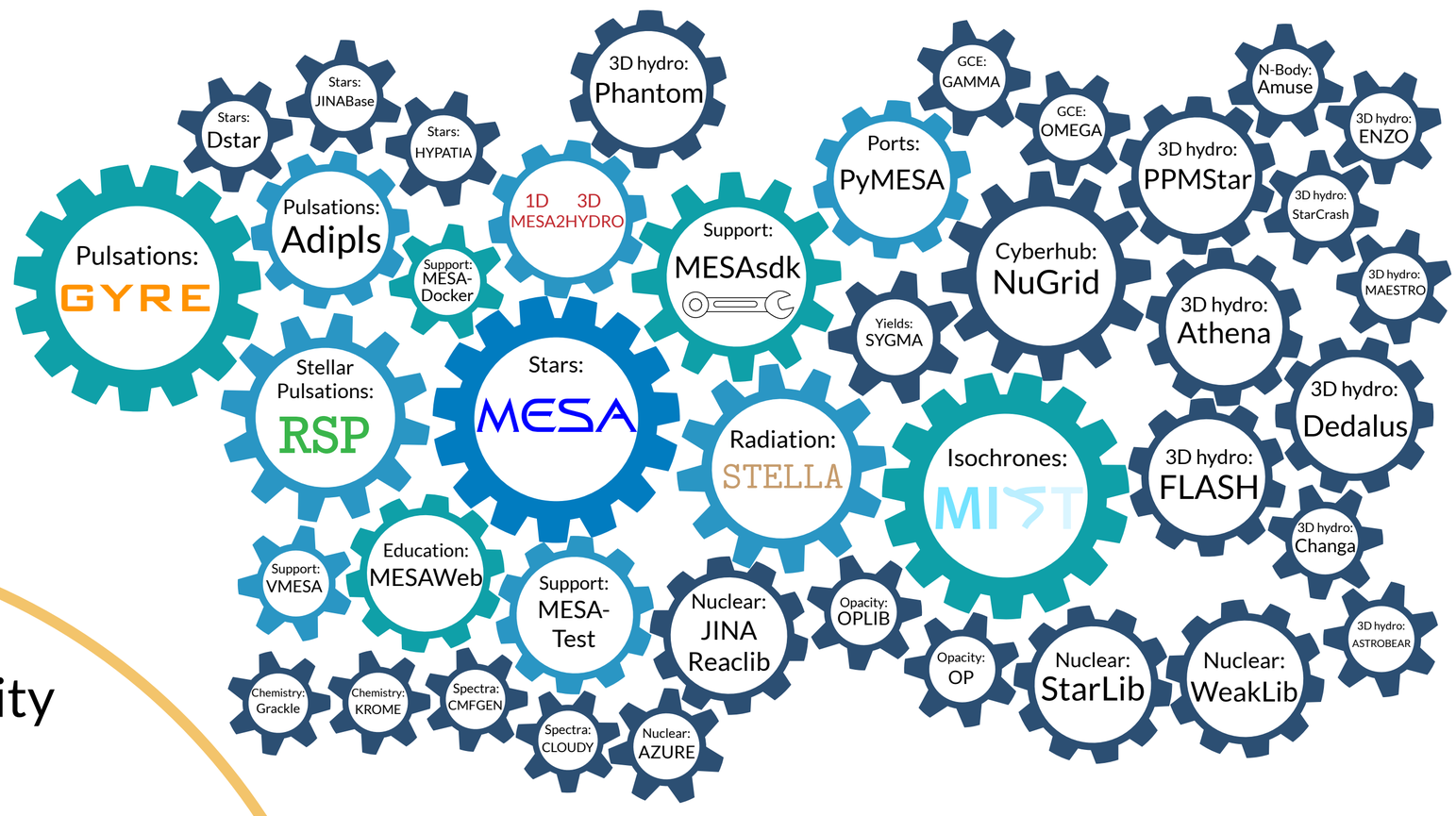
Software instrument: MESA solves the fully coupled structure and composition equations governing stellar evolution.

MESA Project: The international community of MESA users encompasses more than 1000 users spanning more than 100 institutions in 27 countries, and has transformed the way research and education is done in stellar astrophysics. The MESA Project brings together astronomers, computer scientists, data scientists, and astrophysicists to work together on key questions in the field, and serves as a focal point for the international community by fostering open-knowledge exchanges. The MESA Project has led to more than 2000 publications to date, which have generated more than 45,000 citations, suggesting it has had a significant impact in the larger astronomy and physics communities. The MESA Project has led to significant new software developments including GYRE (pulsations), MIST (isochrones), MESA-Web (education), MESA-Docker, and ^{1D}MESA2HYDRO^{3D}, and an expanding ecosystem of software instruments.

More than 400 scientists – undergrads, grads, postdocs, faculty, and amateurs – have participated in a MESA Summer School, who are nowcreating their own MESA communities at more than 50 institutions world-wide. MESA is having a large impact on the field and is likely to be the gold standard for stellar astrophysics for the next generation of researchers.



Gaia LIGO SDSS Hubble JWST LSST TESS LCOGT NuSTAR



Laboratory Astrophysics