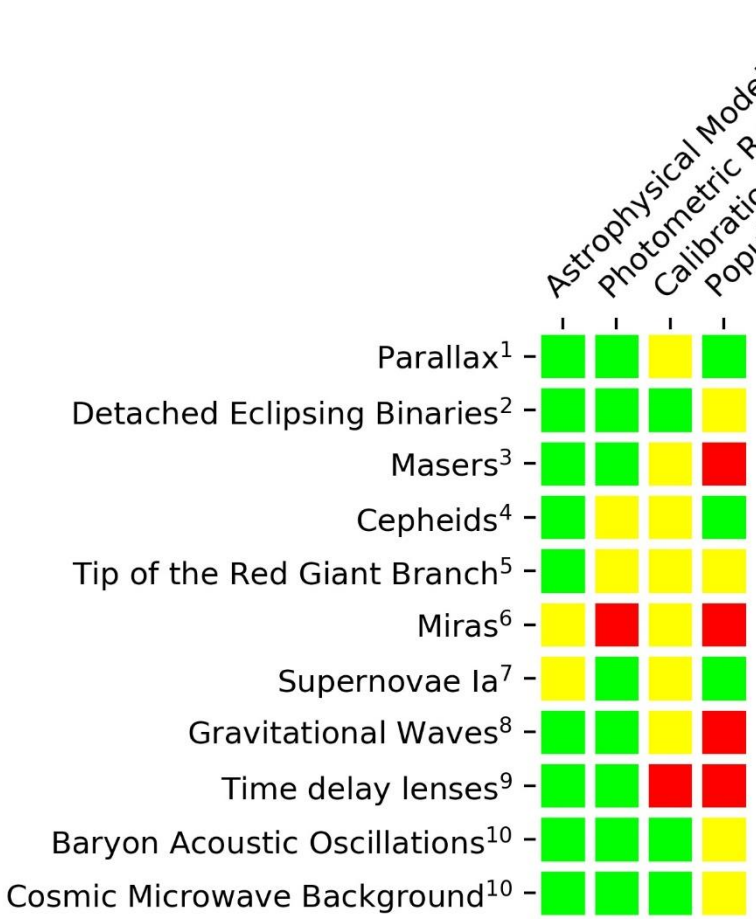

Analysis Inputs

a. **Astrophysical Modelling** is whether the object being observed has a solid theoretical understanding.
b. **Photometric Reduction** are uncertainties that may be introduced converting imaging into parameters.
c. **Calibration** is uncertainty about the absolute magnitudes or physical size of the object.
d. **Population Size** characterises the quantity of independent data sets, objects or events that are available.

Probes of H_0

1. **Parallaxes** in Gaia DR3 have considerably improved the zero point, but not yet fully to science mission goals.
2. **Detached eclipsing binaries** provide a solid distance to the LMC and it is hoped in future to M31.
3. **Masers** are rare astrophysical systems and it is unlikely many more useful ones will be found, and reliance must be placed on the modelling of the accretion disk.
4. **Cepheid** crowding, blending and the calibrated slope of the Leavitt law has been the subject of recent work.
5. **TRGBs** are well understood stars which can be observed in uncrowded fields, but the calibration is debated. The magnitude is a statistical fit to a stellar population, rather than individual stars in the case of Cepheids.
6. **Miras** relatively new to distance ladders so not many galaxies have Mira distances. Their uncertainties may reduce quickly in future work.
7. **SN Ia** progenitor theory of an accreting white dwarf lacks observational evidence, hence many models of environmental or progenitor effects have been proposed. It is not clear if the host mass step used in SH0eS analyses is the best one.
8. **Gravitational waves** have ongoing improvements with detector calibration and sensitivity at LIGO and it is anticipated that more binary neutron star and binary black hole mergers will be detected.
9. **Time delay lenses** have mass modelling uncertainties, and a larger number of systems will need to be analysed to provide reliable convergence.
10. **BAO** and **CMB** future observations will extend the resolution of current data and help discriminate between new cosmological model proposals.