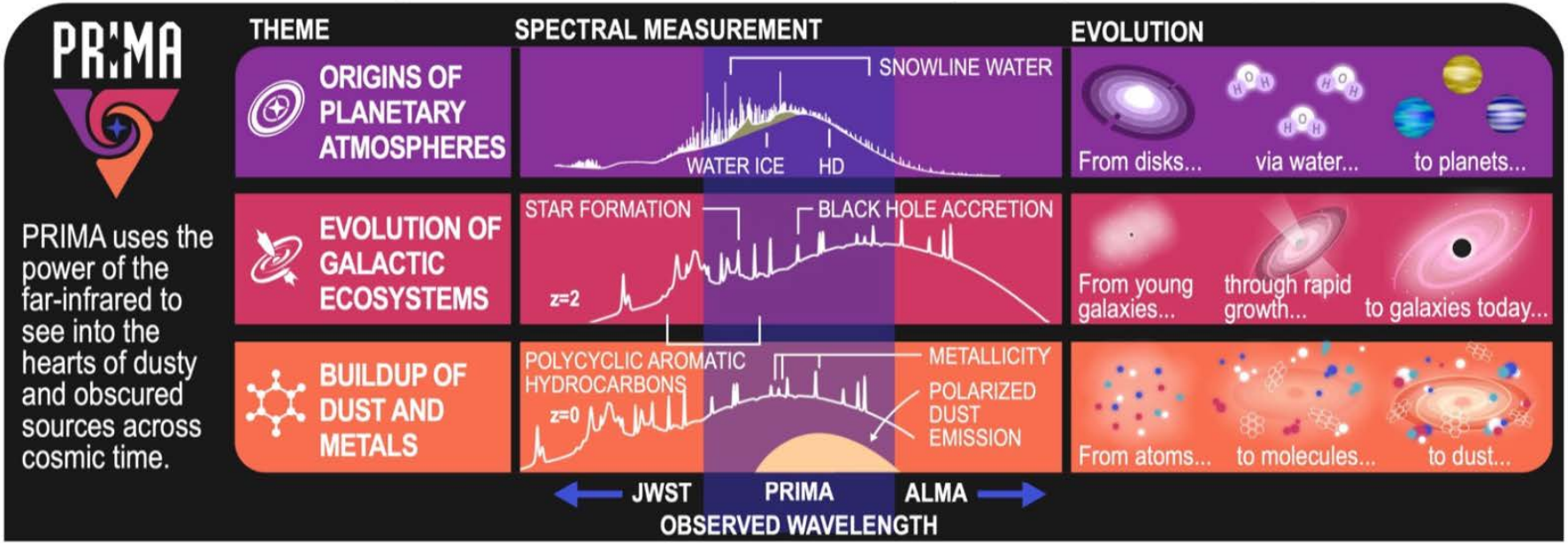
PRIMA PI Science Programs: Exercises the observatory, and provides legacy datasets



Planetary Atmospheres → High-res spectroscopy across the full 24-235 μm band. R = 4,400 at 112 μm

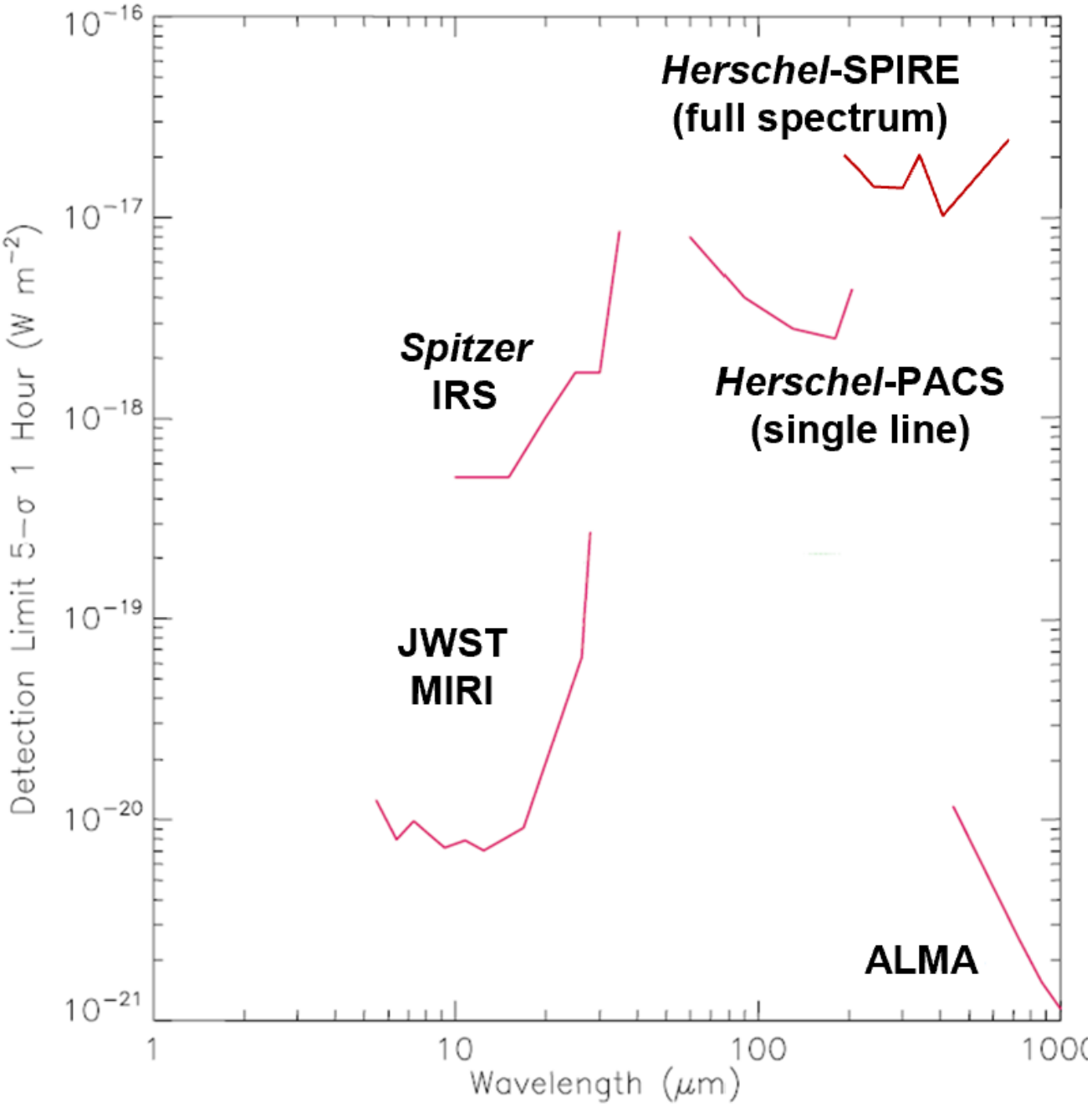
Galactic Ecosystems →

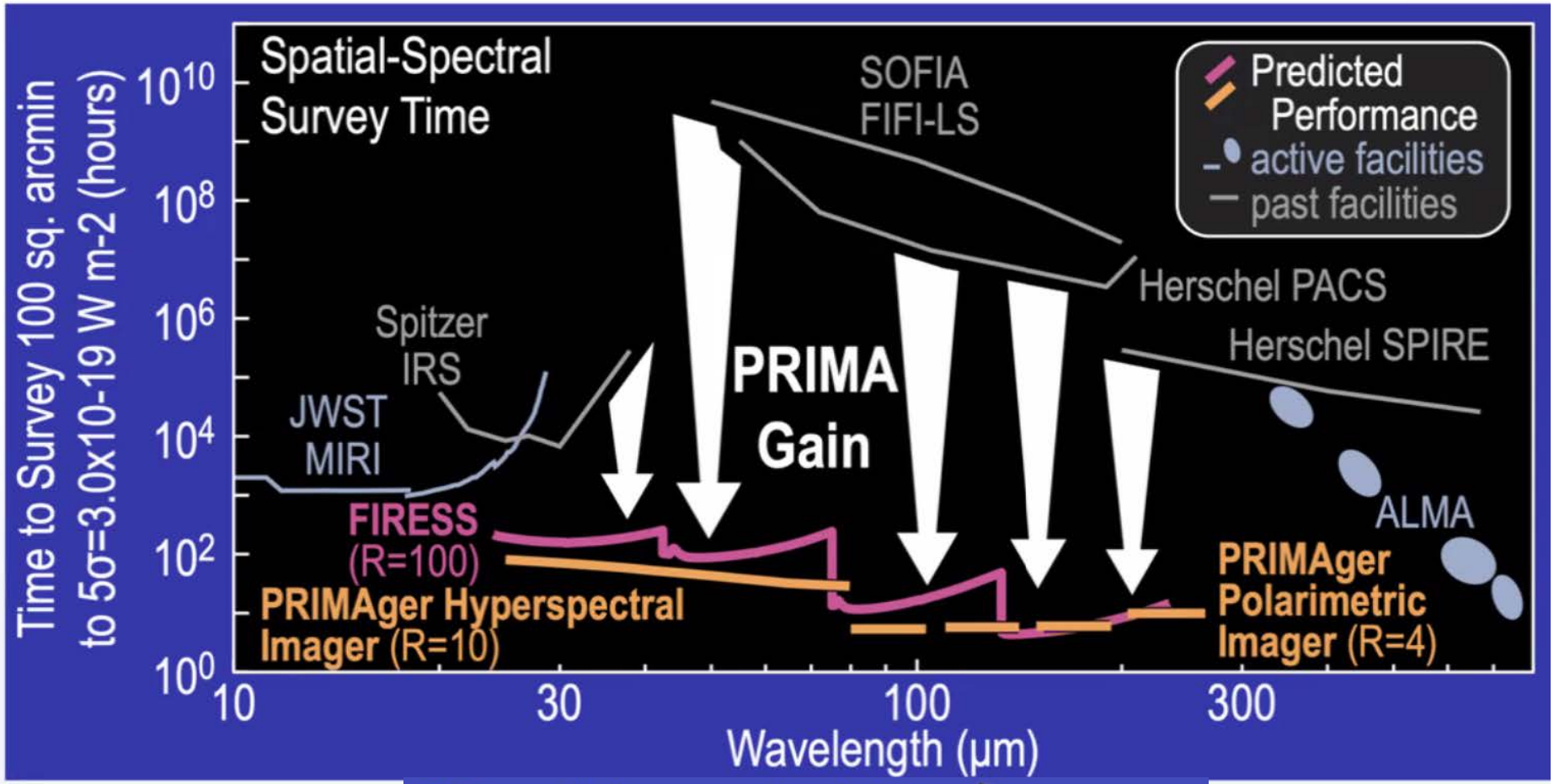
Dust and Metals →

Hyperspectral blind imaging surveys, follow-up full band spectroscopy for fine-structure lines, PAHs at z=1 to 2.3

→ Full-band medium res spectroscopy for outflows

→ Polarimetry at 90-235 μm


Herschel-SPIRE
(full spectrum)
Spitzer
IRS
Herschel-PACS
(single line)
JWST
MIRI
ALMA
Detection Limit 5−σ 1 Hour (W m−2)
Wavelength (μm)
10−16
10−17
10−18
10−19
10−20
10−21
1
10
100
1000



10X higher spectral resolution than *JWST* in the mid-IR

30X more sensitive than *Herschel* for point sources

100,000X faster mapping speed for imaging and wideband spectroscopy vs. previous far-IR missions

- **PRIMA science organisation**

- **Large programmes**

- **PRIMA's phenomenal sensitivity**

- **Preparatory theoretical modelling**

PRIMA and Other Facilities