A → Ω
Probes

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α → Ω

Following the flow of Baryons from the Cosmic Web to Planets

IGM (δ~1-100)

- α: High Resolution UV Absorption Spectroscopy (Multi-object? Tomography?)
- α: Mod Resolution UV Emission Integral Field Spectroscopy (IFS)
- α: Mod Resolution Multi-Object-Spectroscopy (MOS)
Following the flow of Baryons from the Cosmic Web to Planets

CGM ($\delta \sim 10^2$-$10^4$)

- $\alpha$: High Resolution UV Absorption Spectroscopy (Multi-object? Tomography)
- $\alpha$: Mod Resolution UV Emission Integral Field Spectroscopy (IFS)
- $\alpha$: Mod Resolution Multi-Spectroscopy
Following the flow of Baryons from the Cosmic Web to Planets

Galaxies ($\delta \sim 10^4$-$10^8$)

$\alpha$: Mod-High Resolution UV Emission IFS
$\alpha$: Mod Resolution Multi-Object Spectroscopy
$\alpha$: Wide field UV/Optical Imaging
$\Phi$: Far IR/Sub mm imaging/spectroscopy
$\Omega$: High contrast imaging (Galaxy/AGN co-evol)
Following the flow of Baryons from the Cosmic Web to Planets

Clusters/GMCs ($\delta \sim 10^8$-$10^{10}$)
- $\langle$ : Wide field UV/Optical Imaging
- $\langle$ : Mod-High Resolution UV Emission IFS
- $\langle$ : Mod Resolution UV Multi-Object Spectroscopy
- $\Phi$: Far IR/Sub-mm imaging/spectroscopy
Following the flow of Baryons from the Cosmic Web to Planets

Protostars/PPDs/Young Stars ($\delta \sim 10^{16}-10^{19}$)
- $\Phi$: Far IR/Sub mm imaging/spectroscopy
- $\Omega$: High Contrast optical Imaging/Sp
- $\alpha$: Wide field UV/Optical Imaging
- $\alpha$: High Resolution UV spectroscopy
- $\alpha$: Mod-High Angular Resolution UV Emission IFS
Following the flow of Baryons from the Cosmic Web to Planets

Giant Planets ($\delta \sim 10^{24}$)
- $\Omega$: High Contrast Imaging
- $\Omega$: High Angular Resolution, Low Spectral Resolution IFS
Probe 1 – Alpha α

- **Wide-field**
  - ~1.5 m
  - Wide-field UVO imaging
  - Massively multi-object UV Spectroscopy
    - low, medium, high R?
  - Wide-field UV Integral Field Spectrograph

- **Science**
  - IGM/CGM emission/absorption, tomograph?
  - Galaxy gas, star formation history, feedback
  - Star Formation Region gas physics, PDRs
  - Protoplanetary Disk gas physics
  - General astrophysics

- **Technology Demonstration**
  - High efficiency UV coatings, detectors
Probe 2 – Phi Φ

- Far IR/Sub-mm
  - Single aperture imaging and spectroscopy (SPICA?)

- Science
  - Obscured Star Formation region gas physics, PDRs, dust
  - Protoplanetary Disk gas physics
  - Conditions for Habitability of Exoplanetary Systems
  - General astrophysics

- Technology Demonstration
  - Balloon interferometer?
Probe 3 – Omega Ω

• Narrow-field
  – ~1.5 m
  – Dedicated O/UV (0.1-1 [2?] μm)
  – High resolution imaging
  – High contrast imaging
  – High resolution/contrast imaging spectroscopy

• Science
  – Physics of star formation
  – Proto-planetary disk structure
  – Giant planets imaging & characterization
  – AGN formation, evolution, & feedback

• Technology demonstration
  – High-contrast imaging
  – UV compatibility
  – Starshade?