WEAVE
A New Wide-Field Multi-Object Spectrograph for the William Herschel Telescope

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Summary
WEAVE is a new multi-object spectrograph (1000 fibres, 2-deg field) planned for the 4.2-m William Herschel Telescope on La Palma. First light is expected in 2016.

Nature of dark energy
Baryonic Accoustic Oscillations
Redshift-Space distortions
10^7 spectra over 10^2 deg^2
Redshifts z~0.6-1.4

Science requirements for WEAVE
2 deg field of view.
MOS (multiplex 1000), IFU, mini-IFU front ends.
Spectroscopic resolution:
R = 5000 (480 - 920 nm) for velocities,
R = 20000 (280 - 680 nm) for element abundances.
Throughput ~ 30%.

Science

Structure &dynamics:
radial velocities
10^6 stars 17 < V < 20
2 km/s accuracy

Accretion history:
abundances in streams
5*10^4 metal-poor thick-disk and halo stars 17 < V < 18

Star-formation density evolution
Spectroscopy of LOFAR complete census: ~1500 sources per deg^2

Lyman-alpha emitters
10^4 emitters in 10 deg^2

Nearby thin galaxy disks
dark+luminous matter
Disk vertical velocity dispersion
Mass-to-light ratio from disk dynamics

Milky Way archaeology
Follow-up of ESA's GAIA mission.

Cosmology
Galaxy redshift surveys

The WEAVE Consortium
A pan-European consortium has been established to promote the development of WEAVE. The total cost of the project, including the new prime-focus corrector for the WHT, is estimated to be £10M.

Spectrograph (in Nasmyth enclosure)
2-arm concept
VPH dispersers
R = 5000, R = 20000

New top-end ring
Model of new exchangeable top-end ring (with new corrector + fibre module) being craned into position.

For further information:
http://www.ing.iac.es/weave/

Poster design by Javier Méndez.