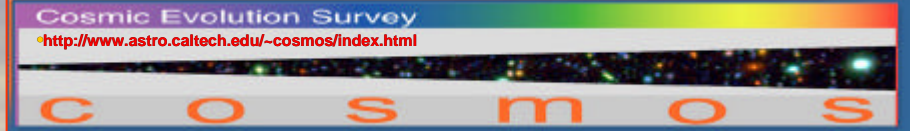
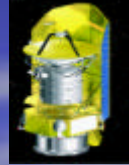


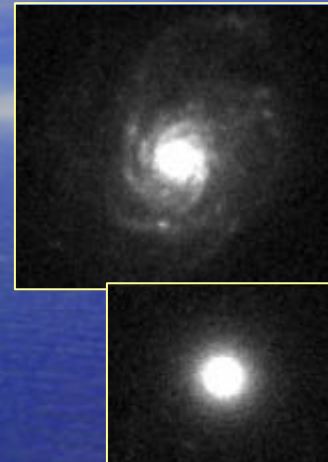
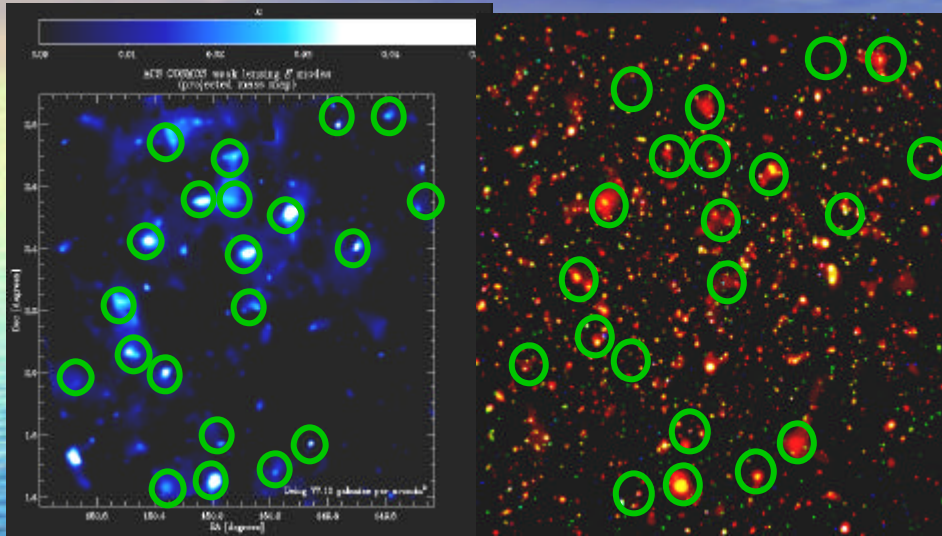
THE CASE FOR AN HERSCHEL OPEN-TIME KEY PROGRAM FOR THE COSMOS FIELD

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An extraordinary variety of multiwavelength data in the COSMOS field



from space:

- HST_ACS I-band
- Spitzer IRAC 3.6, 4.5, 5.6, 8 μ m, Spitzer MIPS 24 μ m (3 Msec)
- GALEX far-UV, near-UV
- XMM 1.5 Msec
- Chandra 2 Msec survey
- Soon to come: sub-mm w. SCUBA2, APEX/LABOCA

ground based:

- Subaru 8Cam B,V,r,i,z'
- NOAO K-band
- UKIRT J,H band
- VLA 20 cm
- IRAM 1.3mm
- VISTA 5-band medium-deep full-area & ultra-deep in a fraction
- ESO/VIMOS & Magellan optical spectroscopy for more than 35000 sources
- NOAO + CFHT K band

SCIENCE CASE FOR A KEY PROGRAM SURVEY IN THE COSMOS AREA

- The unprecedented concentration of high quality multi-wavelength data on such wide contiguous area, ideal for investigating - among others - the effects of the environment and LSS on galaxy & AGN formation and evolution, calls for adequate mapping by Herschel.
- Herschel will offer the only way - in the next several years at least - to measure the bolometric emission by cosmic sources, an essential parameter to characterize the main phases of the transformation of the primordial baryonic gas into stars and BH's.
- An extensive survey in the Open Time, essential to achieve this goal, will not only provide a factor 3 sensitivity gain in the 5 Herschel wavebands over the much shallower GTO mapping, but will also be essential in obtaining good enough PSF sampling and the overall image quality needed for reliable source identification from UV to the sub-mm, quite challenging in such a source-confused situation.
- By filling the last gap in the existing multiwave coverage of the COSMOS field, these "legacy" Herschel observations promise to provide the astronomical community with the ultimate mapping of galaxy and LSS evolution through cosmic times.

Herschel Extragalactic GT Survey Wedding Cake

Name	Area	Field	PACS Time	SPIRE Time	70	110	170	250	350	500
-	deg ²	-	hr	Hr	mJy	mJy	mJy	mJy	mJy	mJy
Level 4	2	COSMOS	~220	~50	6.0	11	14	21.1	25.5	29.1

SOME ENVISAGED PLANS

Name	PACS Time	SPIRE Time	Total time req.	70	110	170	250	350	500
-	hr	hr	hr	mJy	mJy	mJy	mJy	mJy	mJy
Spitzer & Guar. Time	~220	~50	160	6.0	11	14	21.1	25.5	29.1
H-COSMOS A 2 sq.deg.	500 720	150 200	650 810	2000 6.0	18000 4.2	35000 4.5	16000 10.6	5800 12.8	 14.6
H-COSMOS B 1 sq.deg.	500 610	225 250	725 825	2000 6.0	12500 3.1	24000 3.3	11200 8.0	5600 9.7	 11.
H-COSMOS C 1 sq.deg.	1000 1200	225 250	1225 1305	2000 3.1	25000 3.1	47600 3.4	22400 8.0	11200 9.7	 11.

