

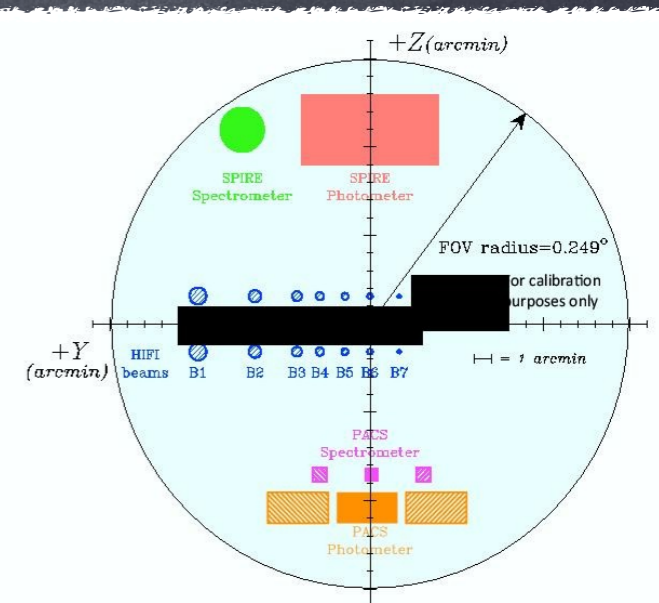
készülődő
A Herschel
PontForrás-Katalógus
(NASA HSC, Konkoly, ESA HSC)

előadó: Verebéli Erika

Budapest, 2014. 09.18. FIKUT VII

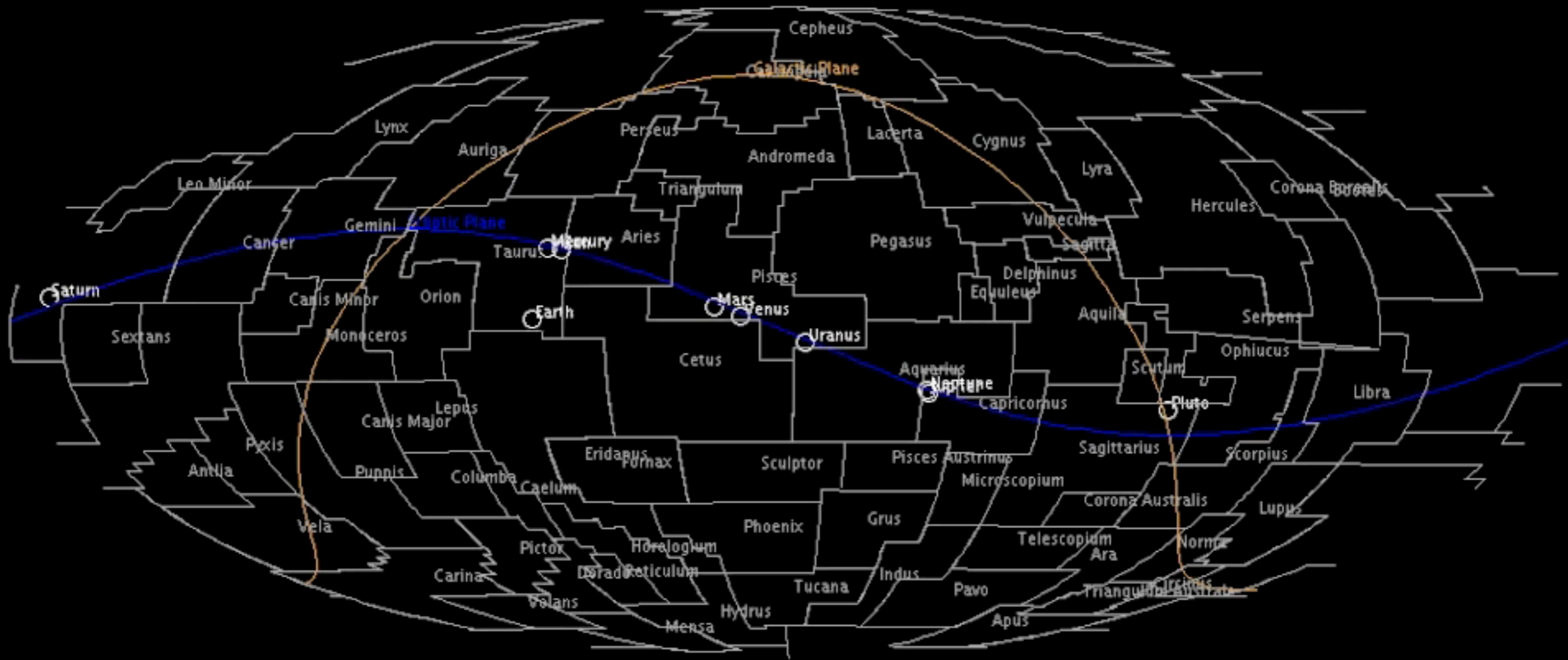
A Herschel űrteleszkóp

- PACS Kamera: 70, 100, 160 μm
FOV: 1.75'x3.5', RES: 5"
- PACS Spektroszkóp: 51-105 μm ; 103-220 μm
FOV: 0.78'x0.78', RES: 10", 200 km/s
- SPIRE Kamera: 250, 350, 500 μm
FOV: 4'x8', RES: 20-30"
- SPIRE Spektroszkóp: 194-313 μm ; 303-671 μm
FOV: 17", 29", RES: 20-50", 300km/s
- HIFI Spektroszkóp: 157-625 μm
RES: 13-40", 0.02-0.7km/s





Mission incredible!
OD: 2
Epoch: 2009-05-16T10:51:28Z





É-i Galaktikus Pólus

Taurus
Orion

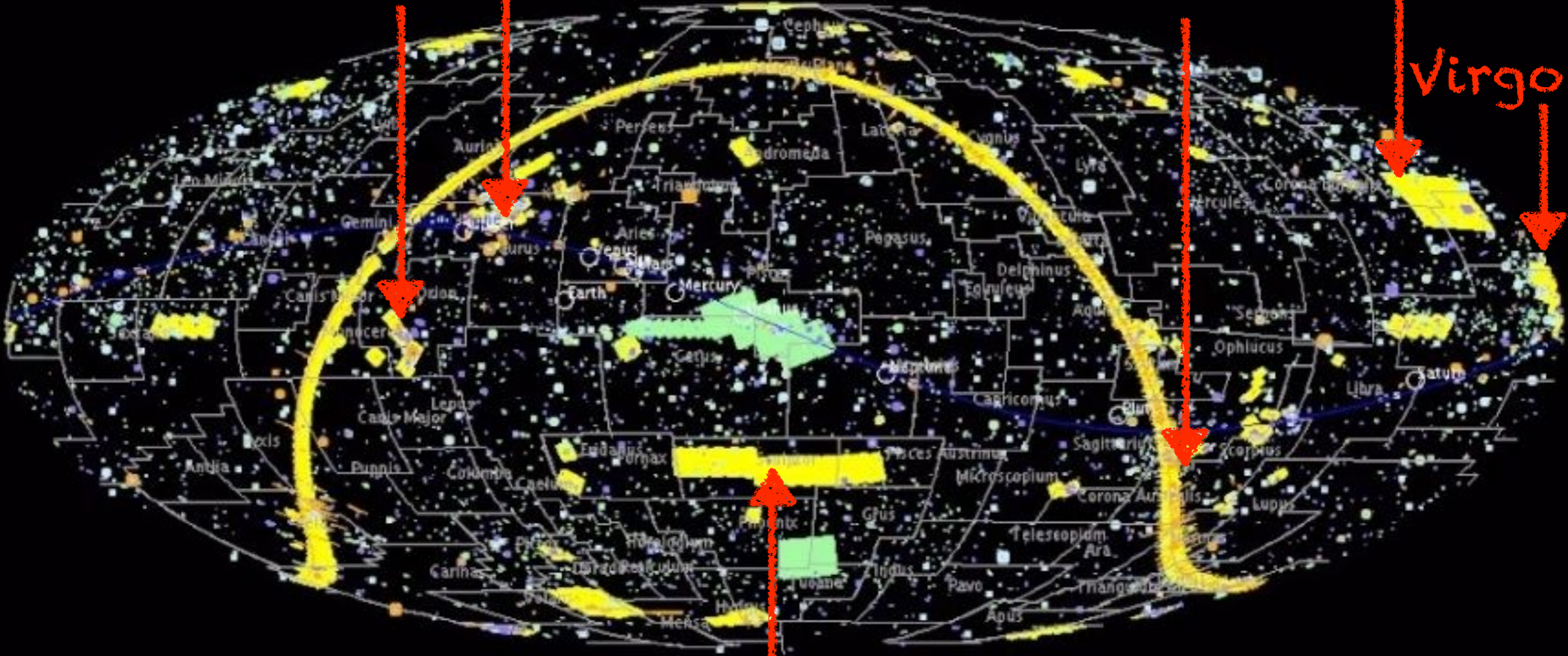
Mission done!

OD: 1446

Epoch: 2013-04-29T14:15:44Z

Sagittarius

Virgo



- DDT_jcernich_10: TIME VARIABILITY OF THERMAL MOLECULAR LINE EMISSION IN IRC+10216 (4th EPOCH)
- DDT_kjusttan_3: Determination of the initial masses for extreme OH/IR stars using isotopologues of H₂O
- OT2_ctibbs_1: Exploring the role of CII in current Spinning Dust Models
- OT2_jpineda_2: Large-scale dynamics and the formation of clouds and stars in the 30 Doradus region of the Large Magellanic Cloud
- OT2_kcroxall_1: Towards a Resolution of Uncertainties in Calibrating Nebular Abundances

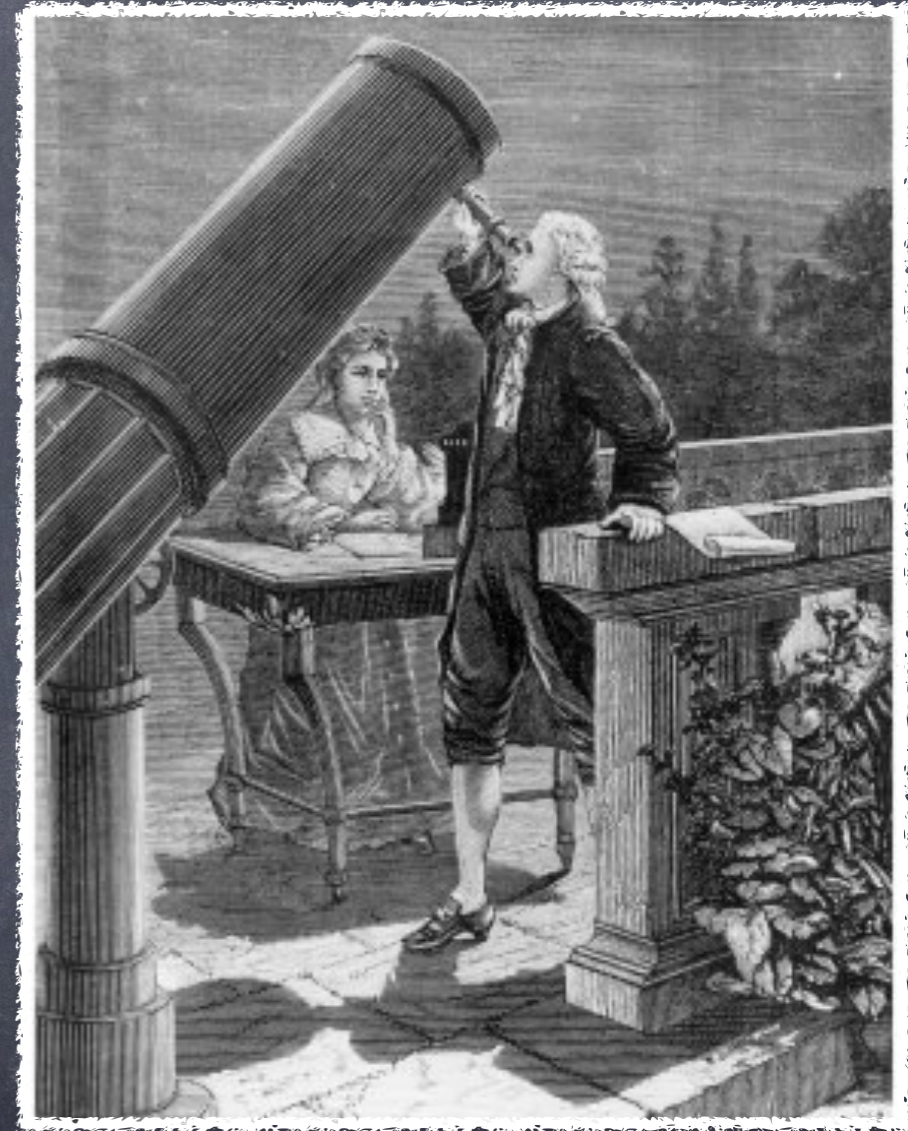
D-i Galaktikus Pólus

Számokban:

	HSA_any (Kalibrációs felvételek is)	Publikus adat
PACS_kép	20 212	16 831
PACS_spektrum	6 153	5 180
Σ	26 365	22 011
SPIRE_kép	6 594	5 167
SPIRE_spektrum	2 179	1 132
Σ	8 772	6 299
PACS/SPIRE Parallel	1 712	780
Σ	9 997	9 118
Összes:	46 846	38 208

Mit lát a Herschel?

- Csillagok: (főszorozatit alig, főleg YSO-
k), Galaxisok, kvazárok,
Törmelékkorongok, Naprendszerbeli
objektumok (bolygók és holdjaik (8 +
178), Üstökösök (3 804), Kisbolygók
(656 345), Földközeli (20 500/11
448))
- Korábban: ISO (2.5-17),
IRAS (12,25,60,100),
SPITZER (3.6,4.5,5.8,8.0,24,70,160),
WISE (3.4,4.6,12,22),
AKARI (9,18,65,90,140,160)





HSA Science Archive v6.0

File View Windows Account Tools Help

HERSCHEL ESA

Search

Query Panels

Main Query Panel

Observation Id: Obs. List: Choose

Proprietary Status:

Geometry Panel

Target: Multiple Target: Resolve Name: Equatorial: Galactic: Ecliptic:

Shape: Circle Box

Centre Coordinates: Target: Radius:

Instruments Query Panel

Instrument: Obs. Type: Standard Data:

All	HIFI	PACS	SPIRE	SPIREPACS
	Single Point Mapping Spectral Scan	Pacs Photometer Range Spectroscopy Line Spectroscopy	Photometer Spectrometer	Parallel Mode

Log Console

Not Logged In

HIPE 12.0.0_RC2 - /Applications/hipe_v12.0.0_RC2/scripts/pacs/scripts/ipipe/phot/scanmap_pointsources_PhotProject.py

File Edit Run Pipelines Scripts Window Tools Help

Editor

scanmap_p...roject.py x fitsReader x

```

64
65 Define the output directory for save frames and maps
66 either: define manually
67 or define it as the directory from which you start hipec
68 """
69 #direc = "/theDirectoryPath/here/"
70 direc = os.getcwd() + "/"
71 fileRoot = direc + object + "_" + camera
72 saveIntermediateSteps = False
73
74 """
75 Settings for the processing
76 """
77 calculateRaDec = False # if True, processing is faster, but it requires 3 times more memory
78 doIndLevelDeg = True # if True, a finer deglitching (nsigma=15) than SPG level 1 (nsigma=30) is performed
79 doPhotometry = True # if True, does the photometry on the source(s) at the end
80 doSourceFit = True # if True, fit the source to get the centre for the aperture photometry
81 # other if false rely on source coordinates in metadata
82 fromAFile = False # load the source coordinates from a catalogue.
83 tfile = direc + "myTargets.txt"
84
85 """
86 Define the turnaround removal:
87 1. upper and lower limits
88 """

```

Console

HIPE>

Tasks Variables

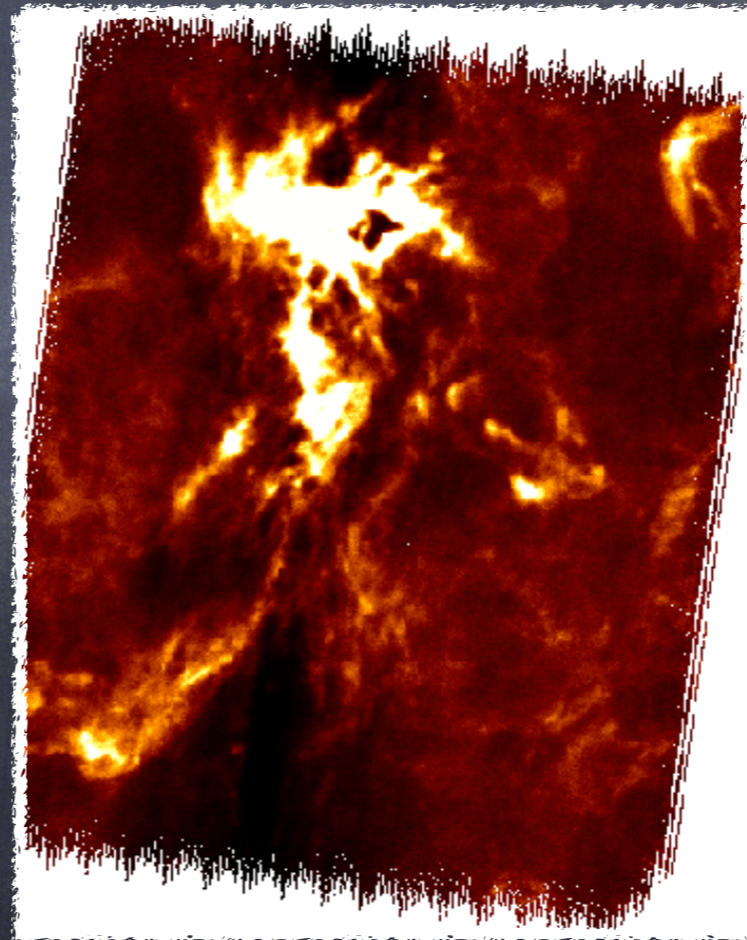
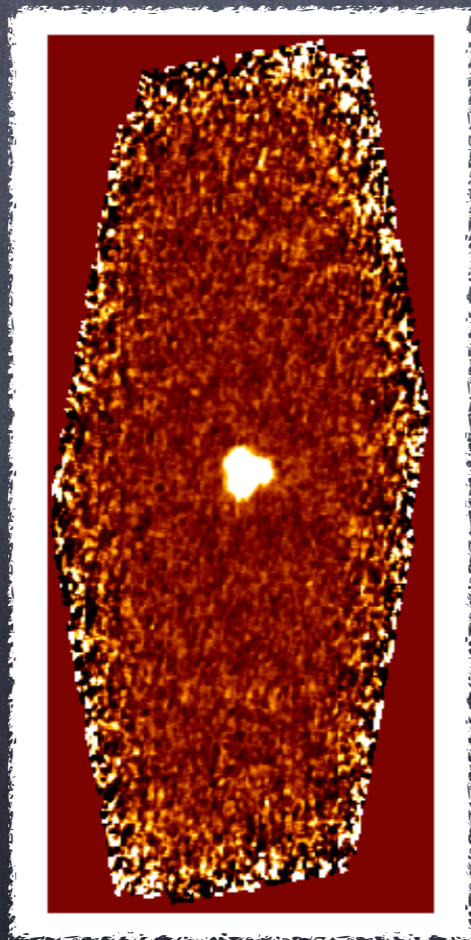
Observations

Other Data

ckiss Checking for updated PACS Calibration... 100% 1, 1 207 of 7657 MB

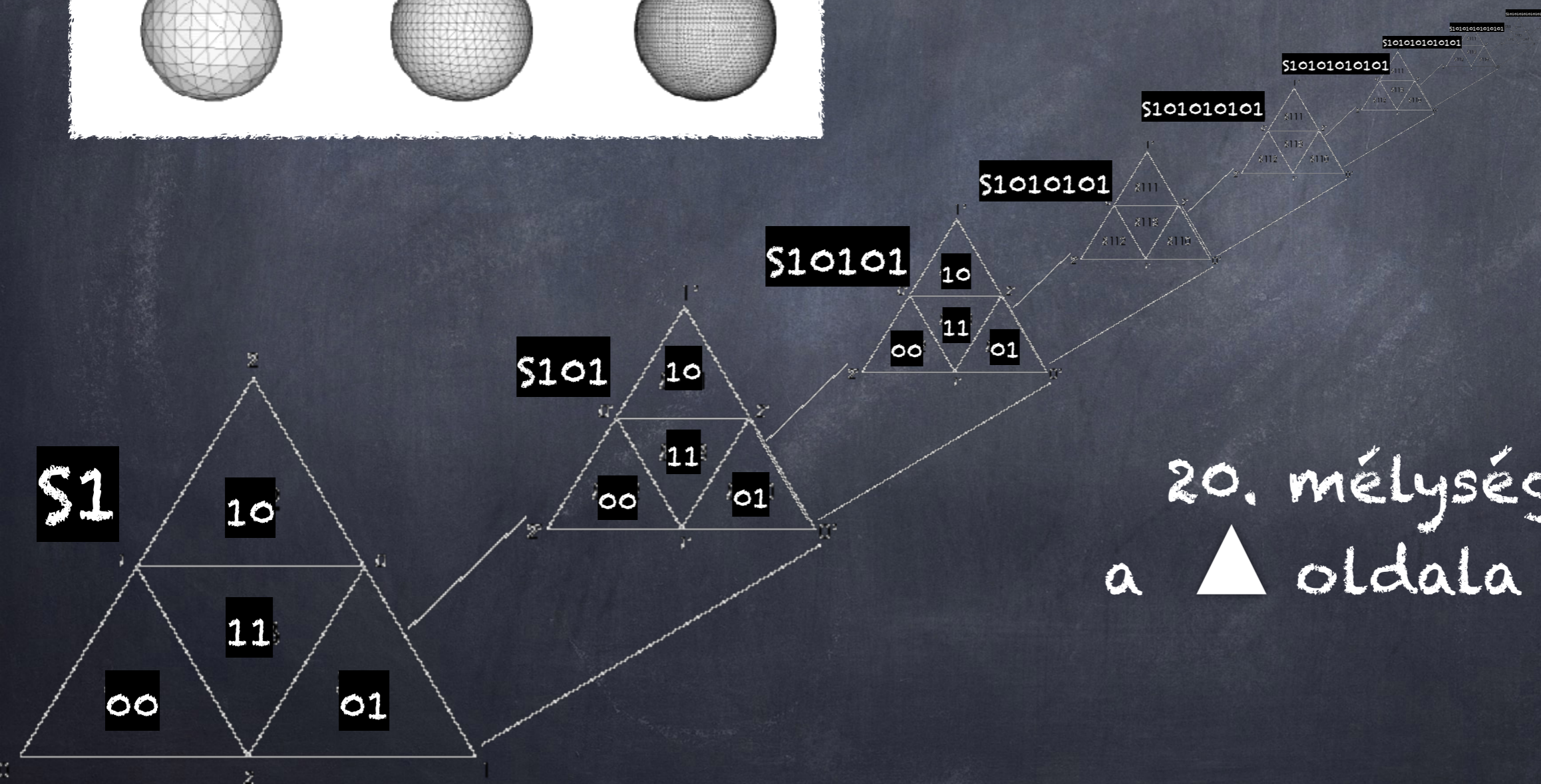
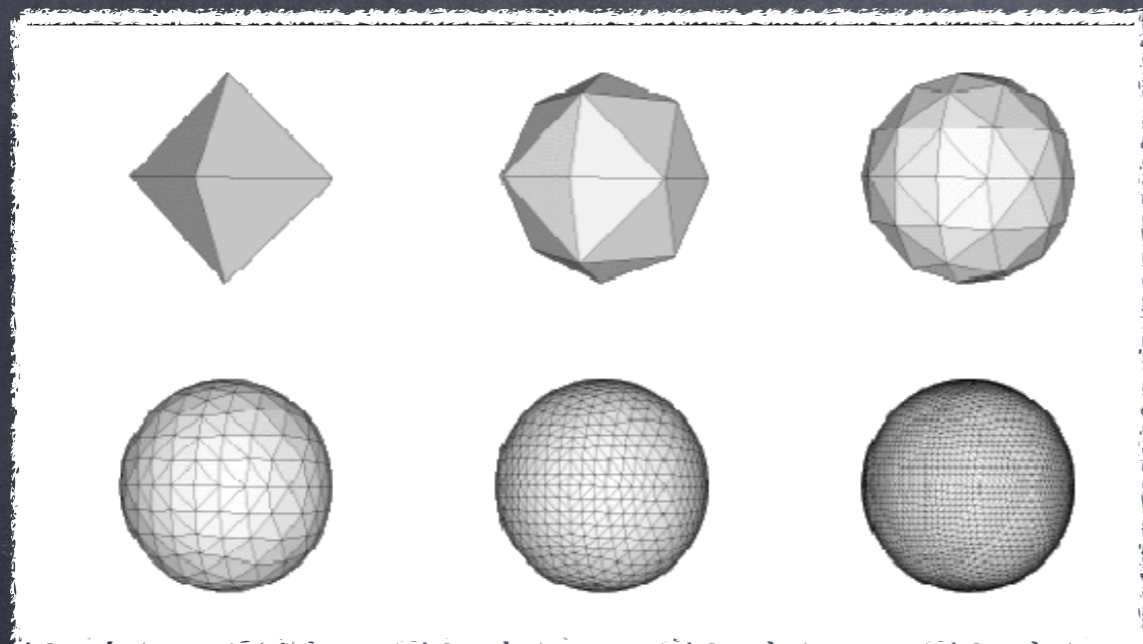
Keresés az adatokban


- 1, Adott RA, DEC koordináta le lett-e mérve?
- 2, Adott területre van-e mérés?
- 3, Adott koordinátára és időpontra van-e mérés?



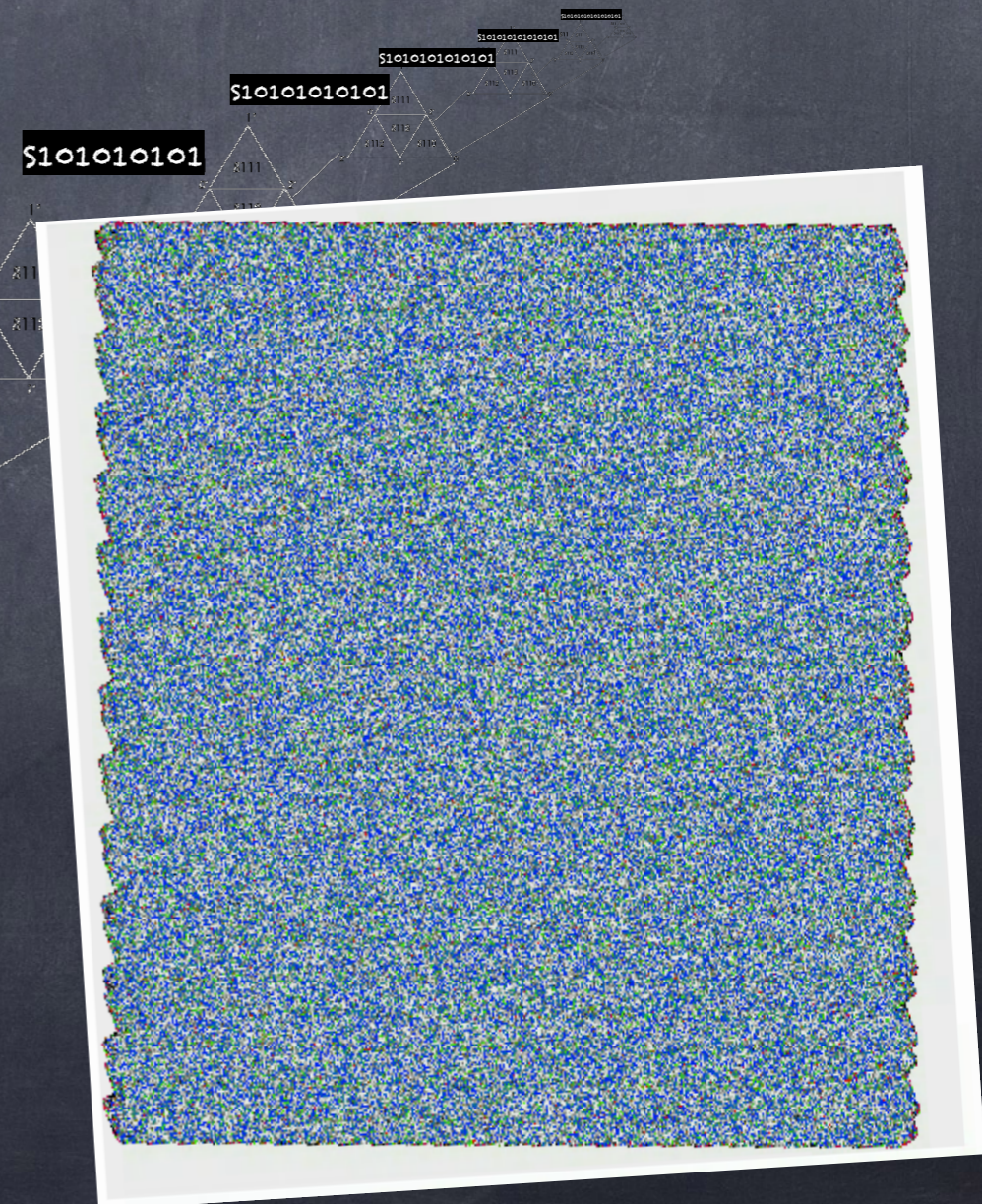
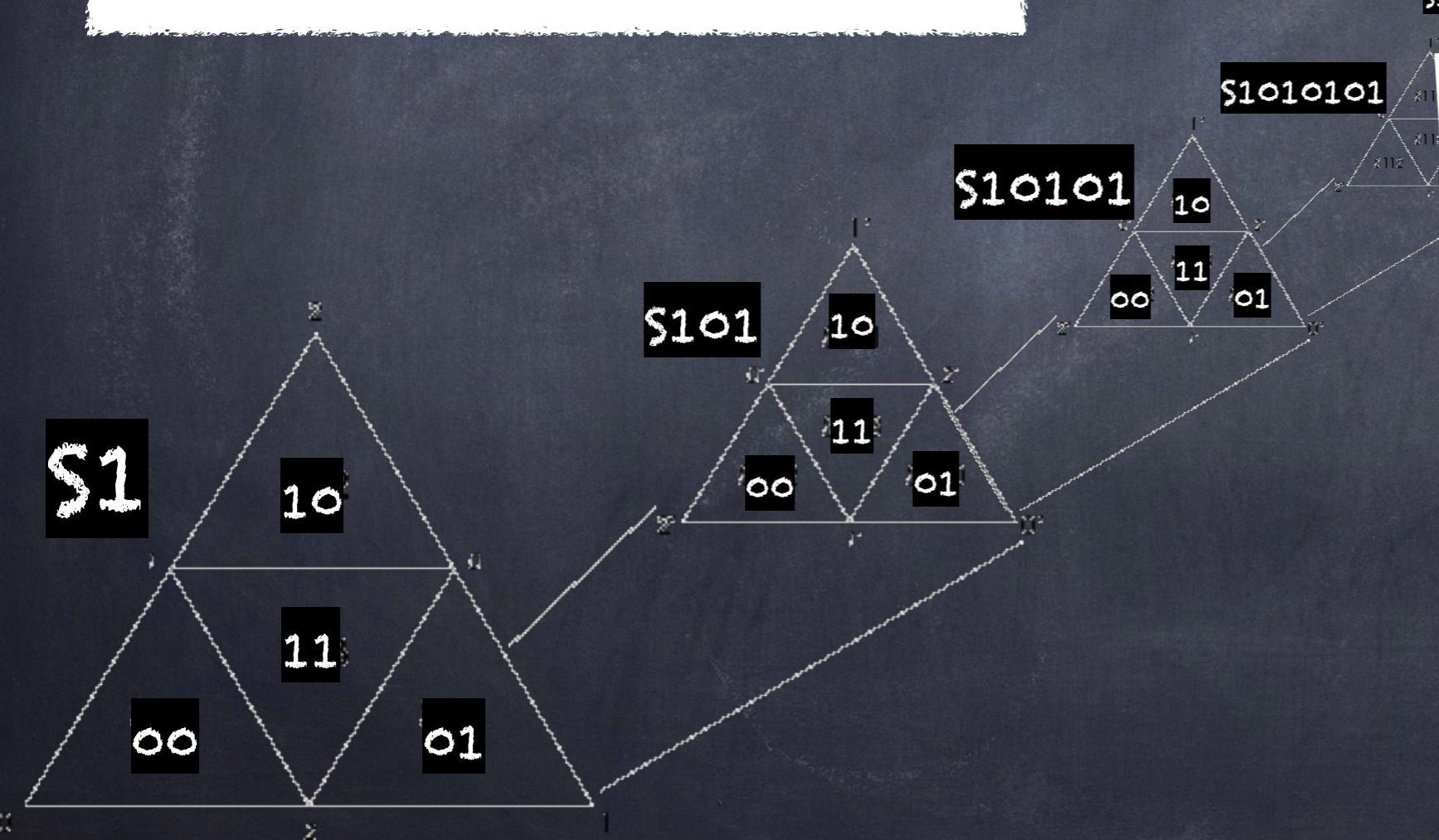
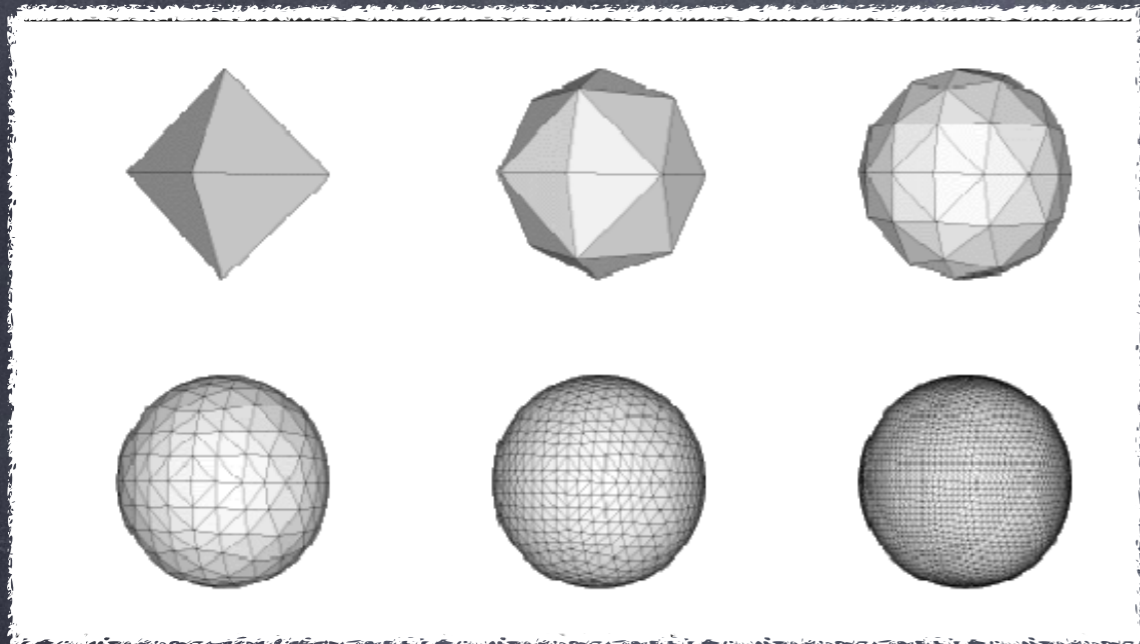
HTM - Hierarchikus Háromszög-Háló

S.Szalay, J.Grey, G.Fekete et al. 2007

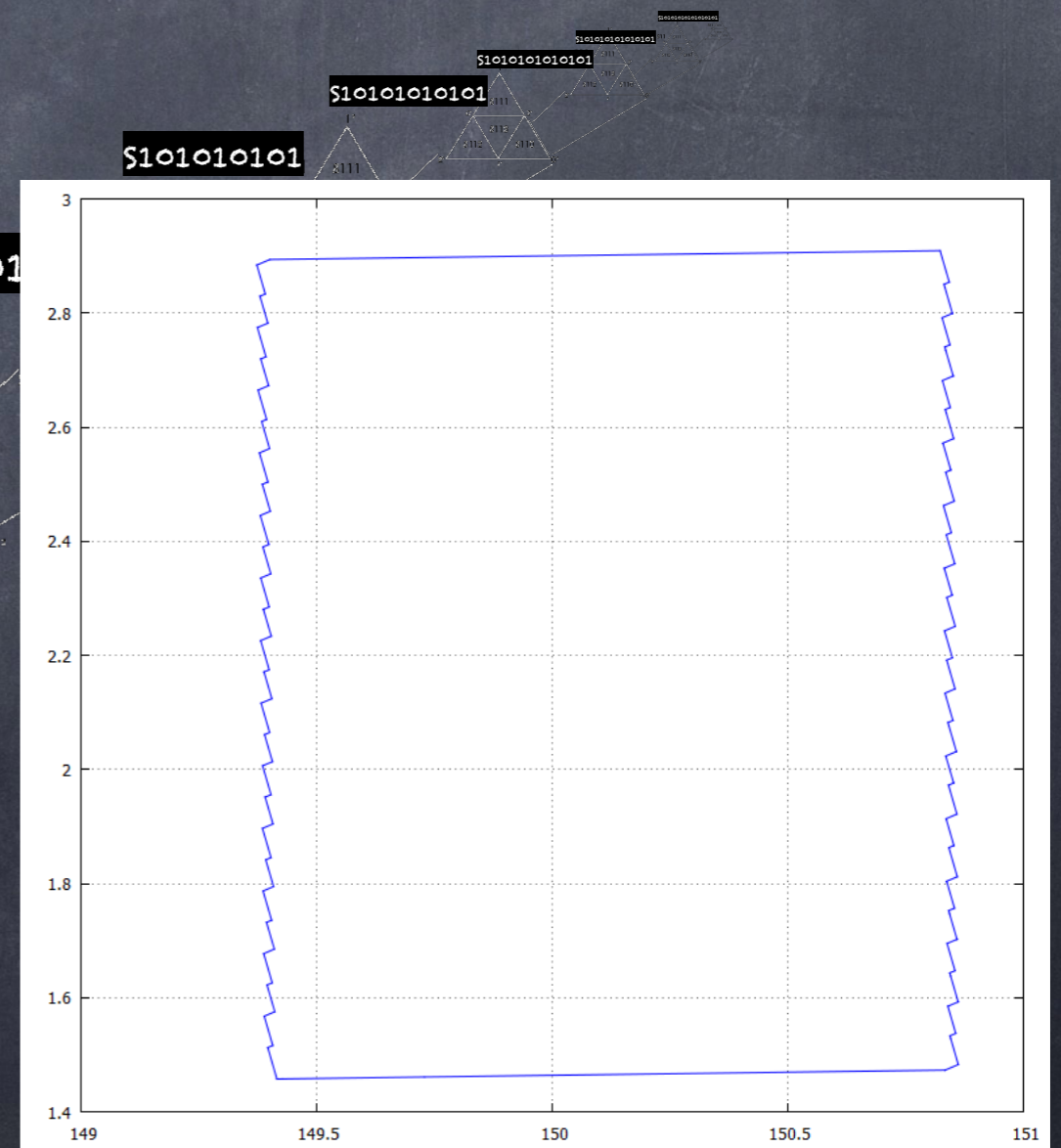
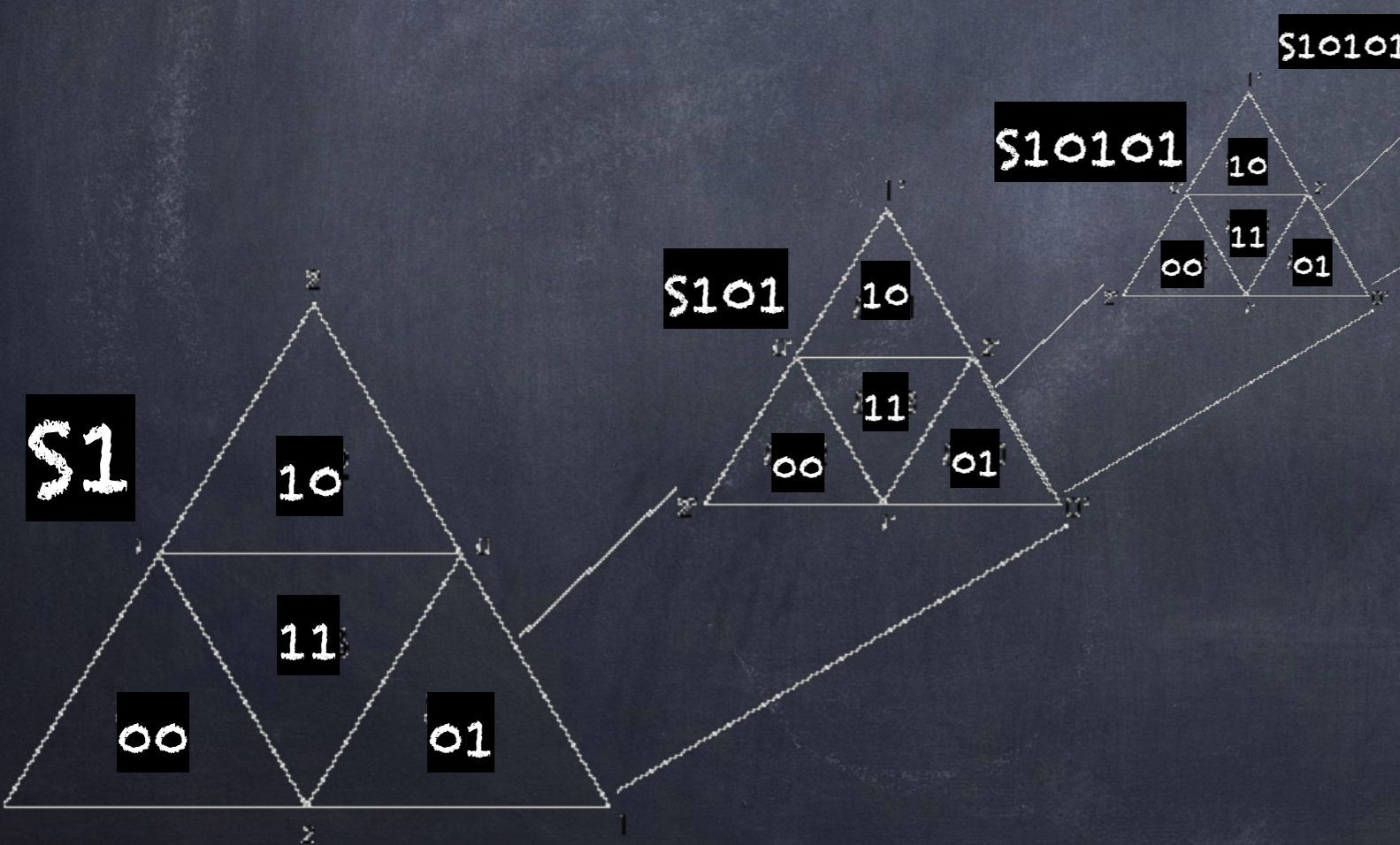
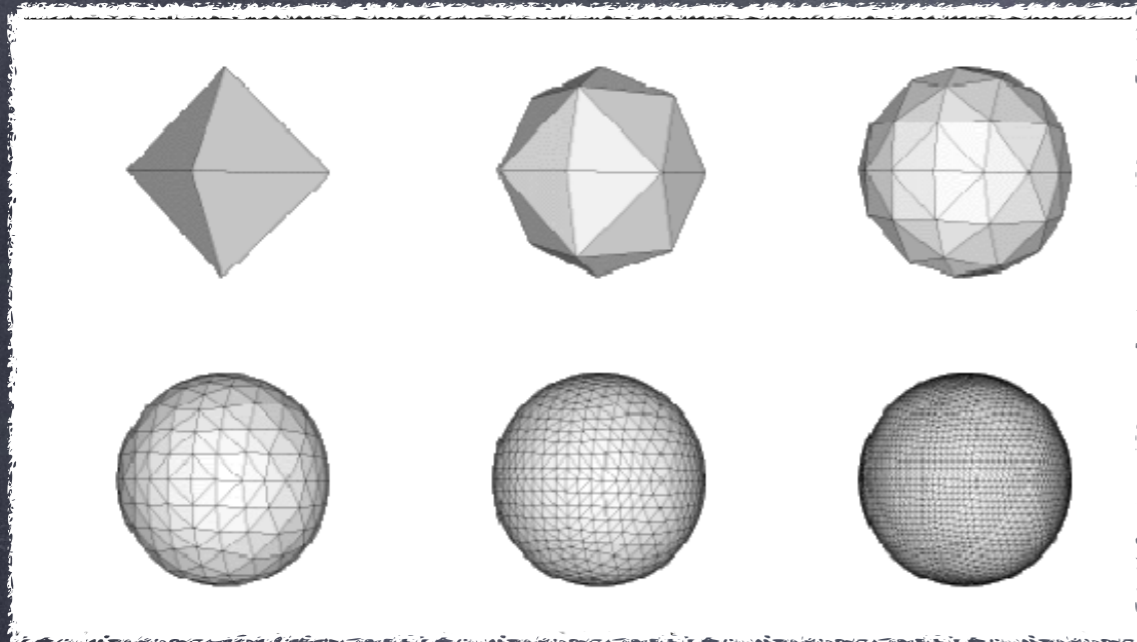


20. mélységben
a  oldala < 0.1 "

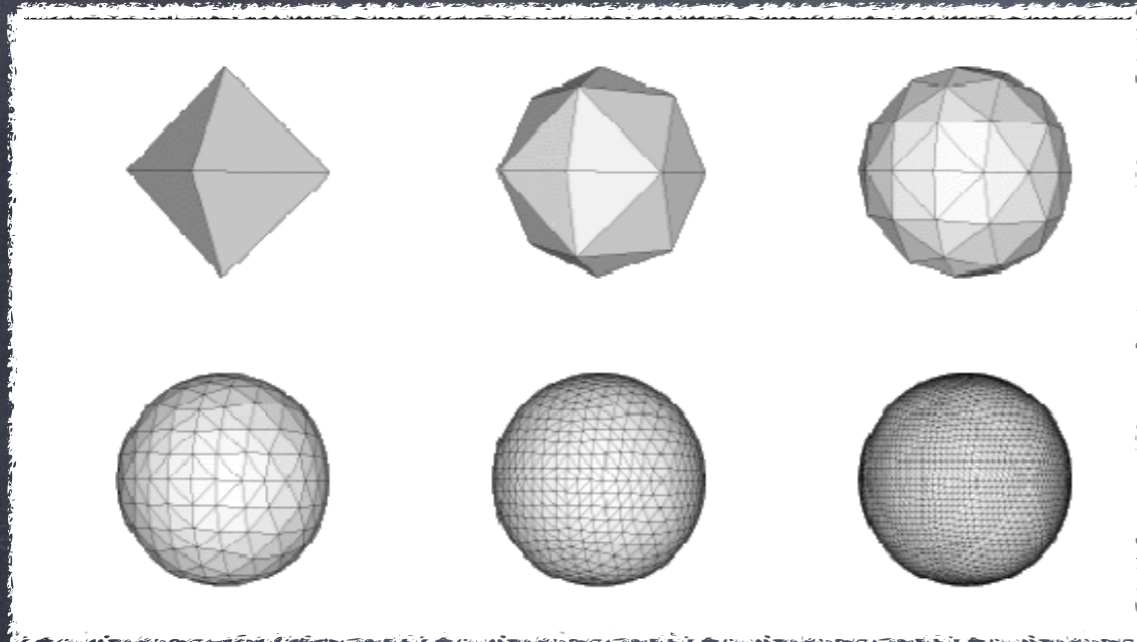
HTM - Hierarchikus Háromszög-Háló



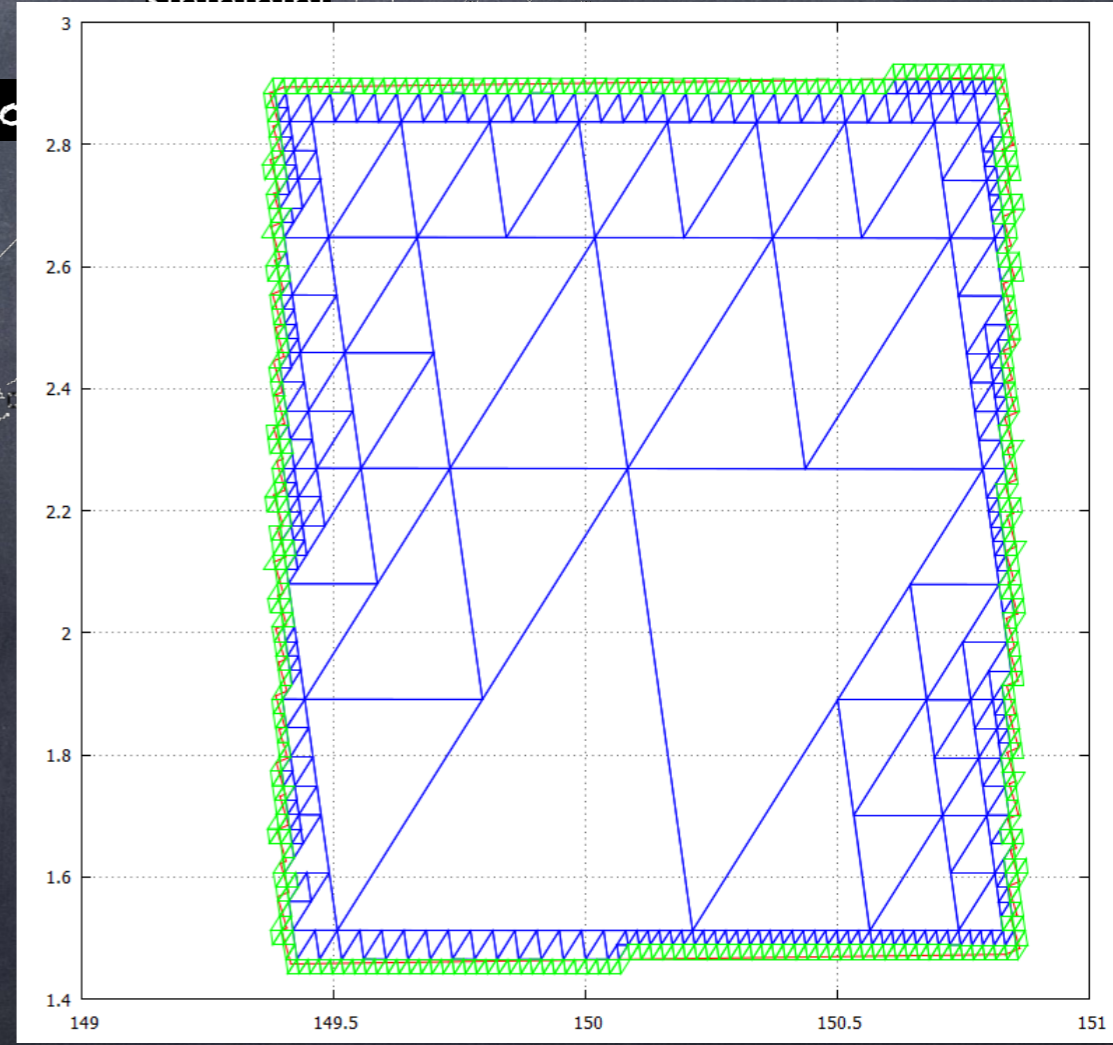
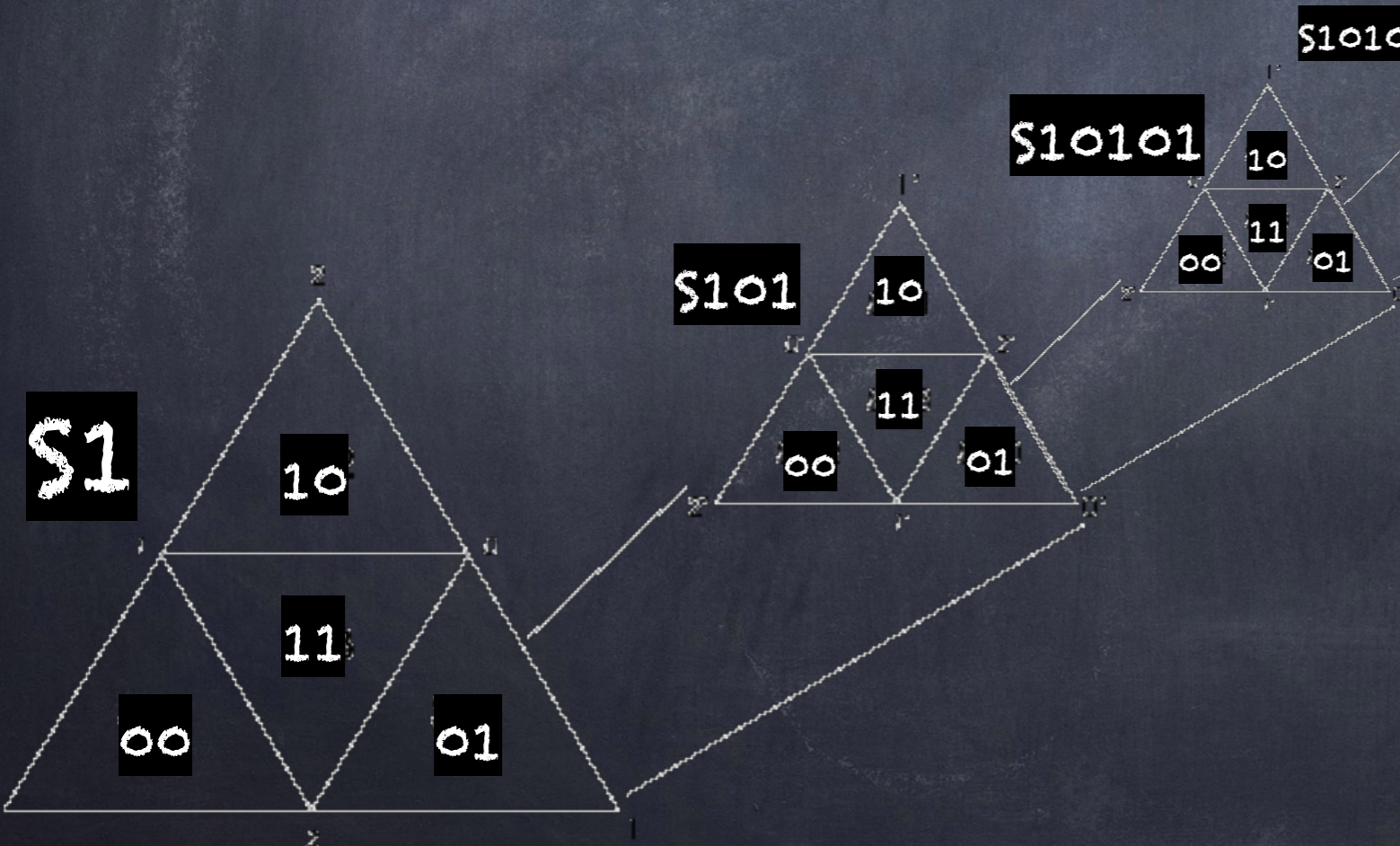
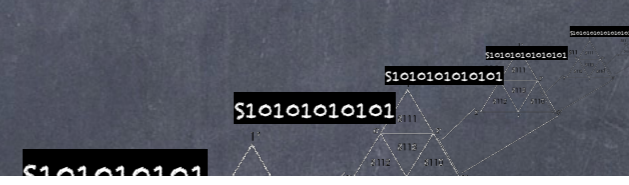
HTM - Hierarchikus Háromszög-Háló



HTM - Hierarchikus Háromszög-Háló



```
WITH q AS  
(  
  SELECT DISTINCT obsID  
  FROM ObservationHtm htm  
  WHERE htm.FromEg(@ra, @dec) BETWEEN htmIDStart AND htmIDEnd AND [partial] = 0  
  
  UNION  
  |  
  SELECT DISTINCT htm.obsID  
  FROM ObservationHtm htm
```





[herschel home](#) [observation search](#) [rest api](#) [docs](#) [credits](#)

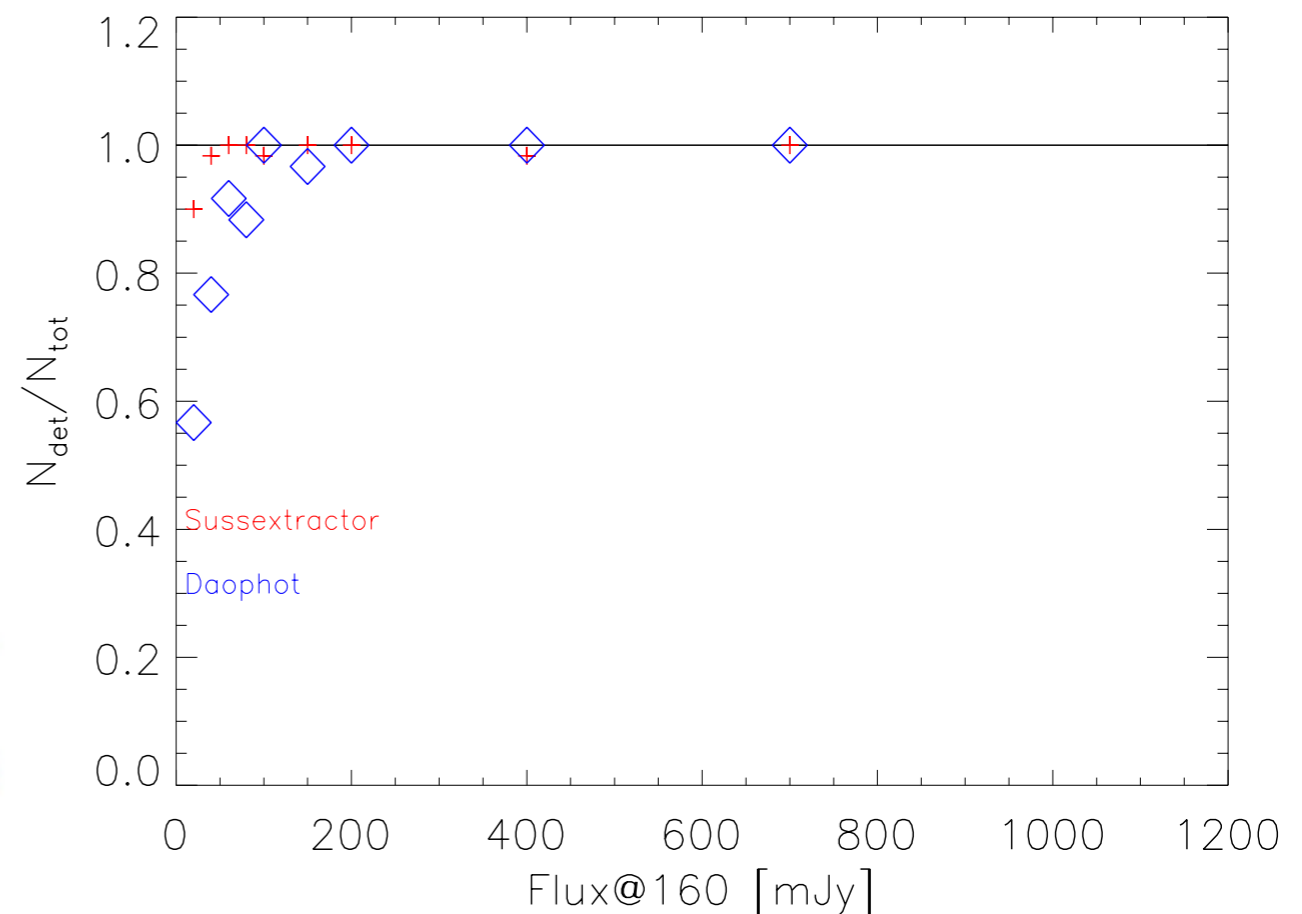
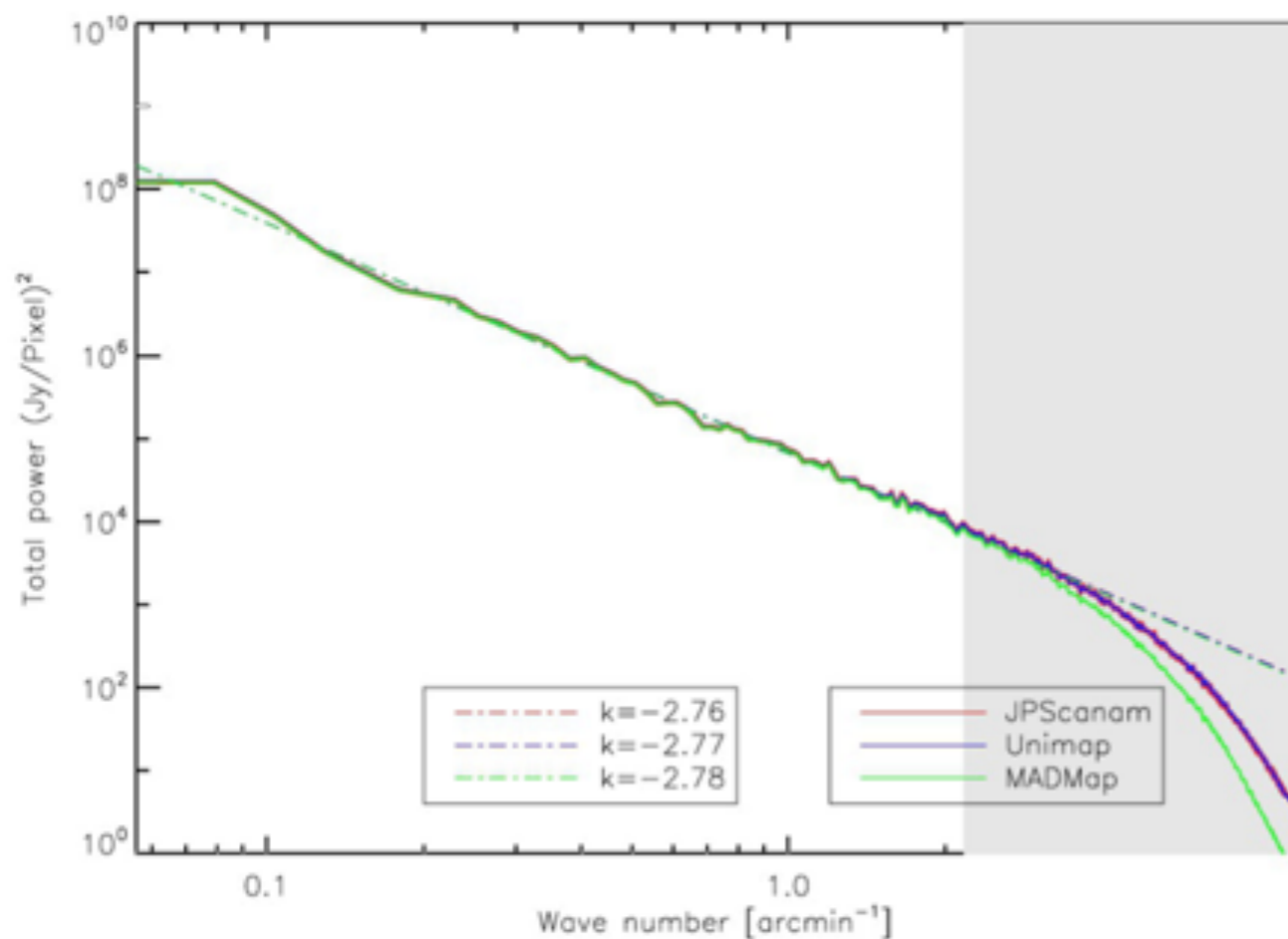
observation search

Instruments: PACS SPIRE PACS/SPIRE parallel HIFI
Fine Time: -
Method: Coordinates Intersect
Coordinates:

search >

Herschel/PACS pontforrás katalógus

- Teljesítményspektrumok alapján a térképkészítő algoritmusok egyenletesen jól teljesítenek - Jscanam gyors, pontos és jól kezeli a forrásokat (nincs undershooting cross)
- A pontforráskeresés és fotometria tesztelése a mérési idősorba injektált ismert fényességű források alapján
- A HIPE-ből elérhető keresőalgoritmusok közül a Sussextractor a legjobb
- Sussextractor nem jó fotometriára - Daophot jó
- Fotometria 1-2% pontosságú lapos háttér esetében
- Bonyolult háttér esetében elromlik. -> Függs a struktúrazajtól



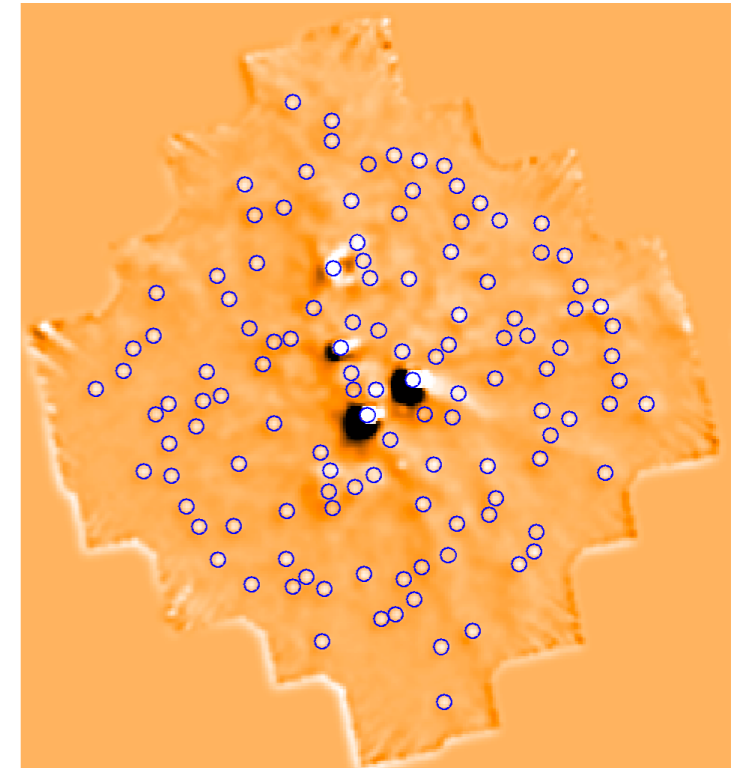
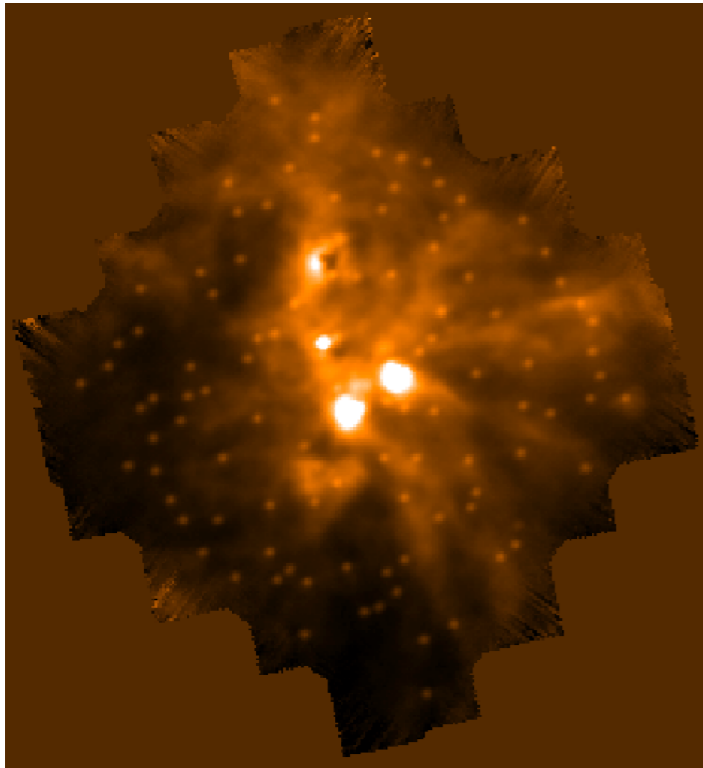
100 db injektált forrás



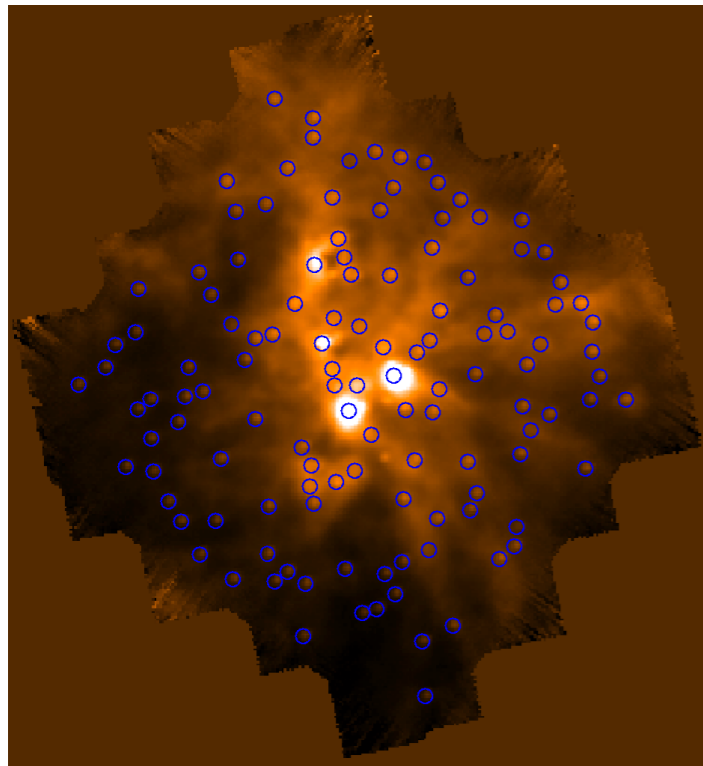
Starlet transzformáció



Forráskeresés



Detektált források az eredeti képen



Vörös: detektált források a starlet transzformáció segítségével
Kék: detektált források az eredeti kép alapján
Nagyobb arányban detektálhatók a valós források és kisebb arányban a hamis források, ha starletet használunk

