

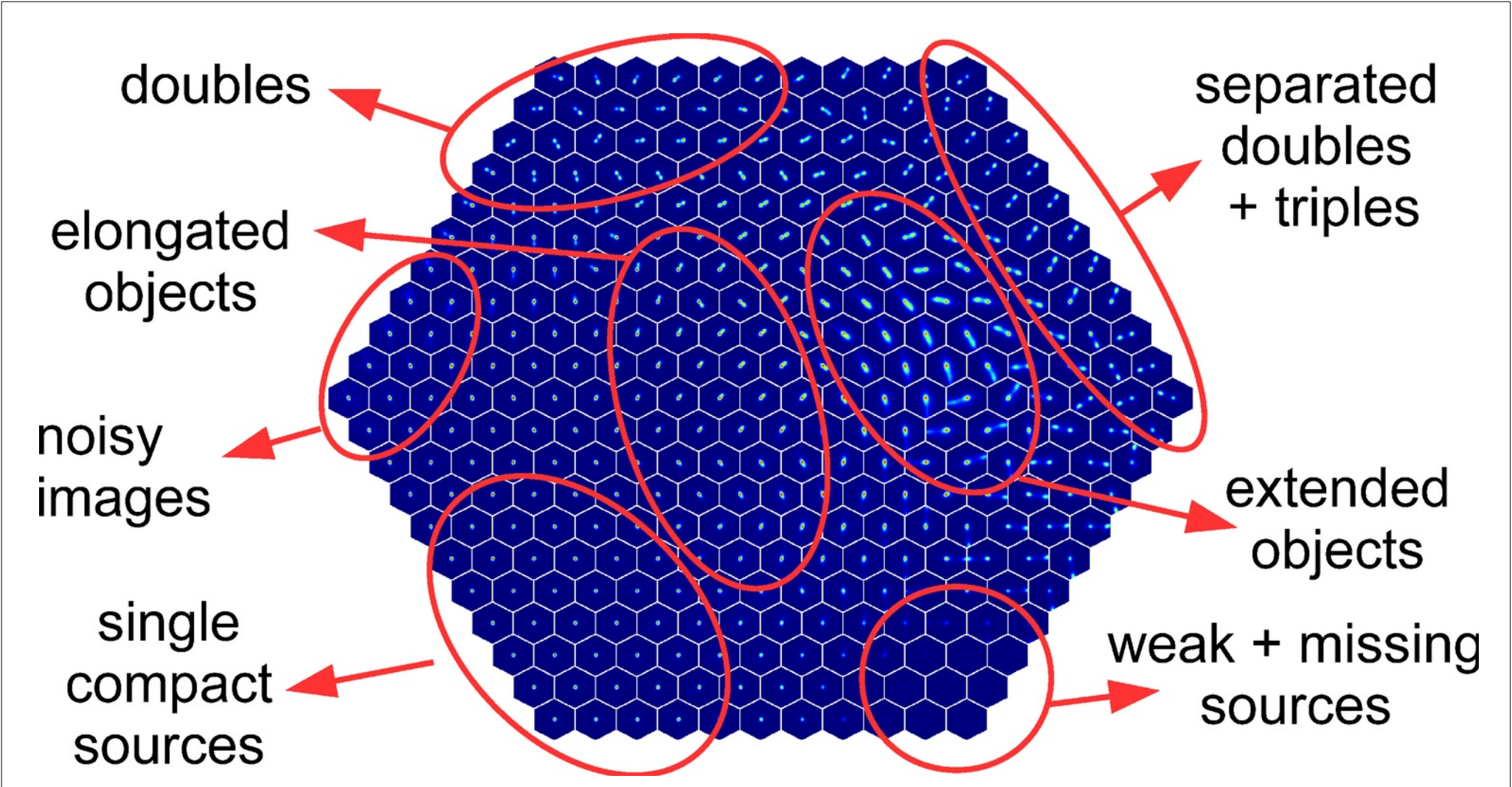
HITS

Heidelberg Institute for
Theoretical Studies

Spherinator & HiPster:

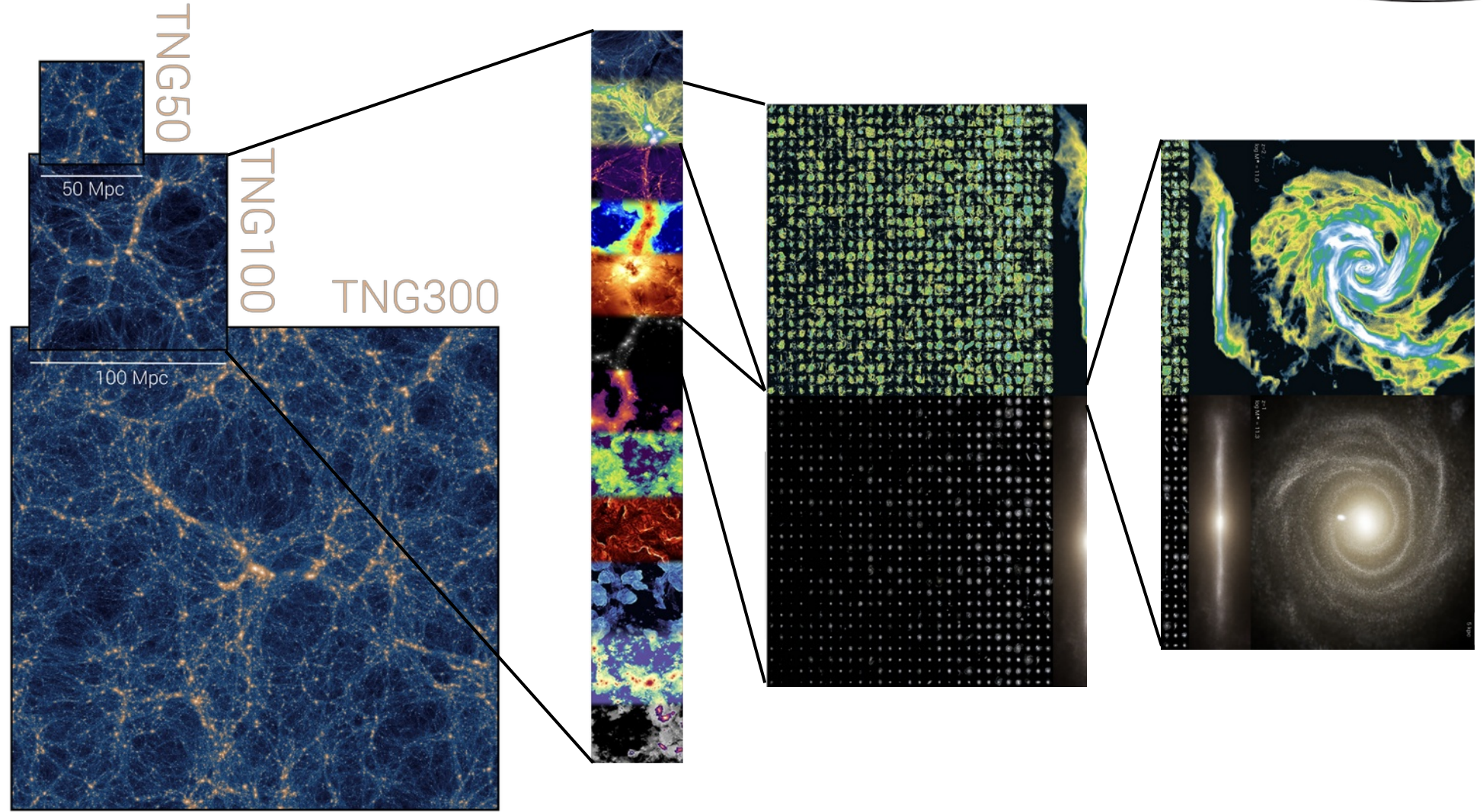
Using HiPS tiling to allow for explorative access to simulations

Interop Victoria, 2018, DM

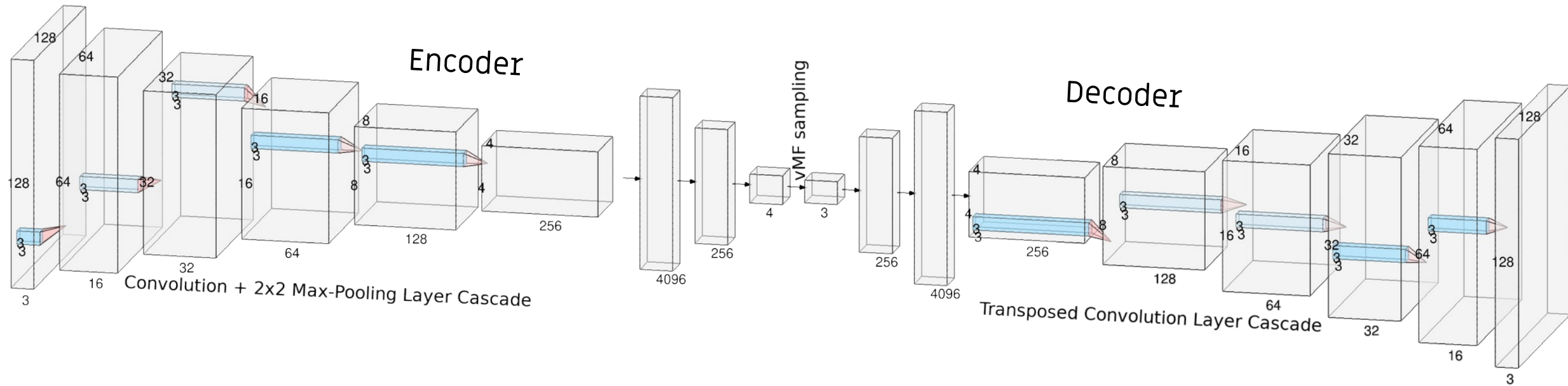


<https://wiki.ivoa.net/internal/IVOA/InterOpMay2018KDIG/KDIG.pdf>

SPACE / IllustrisTNG simulation



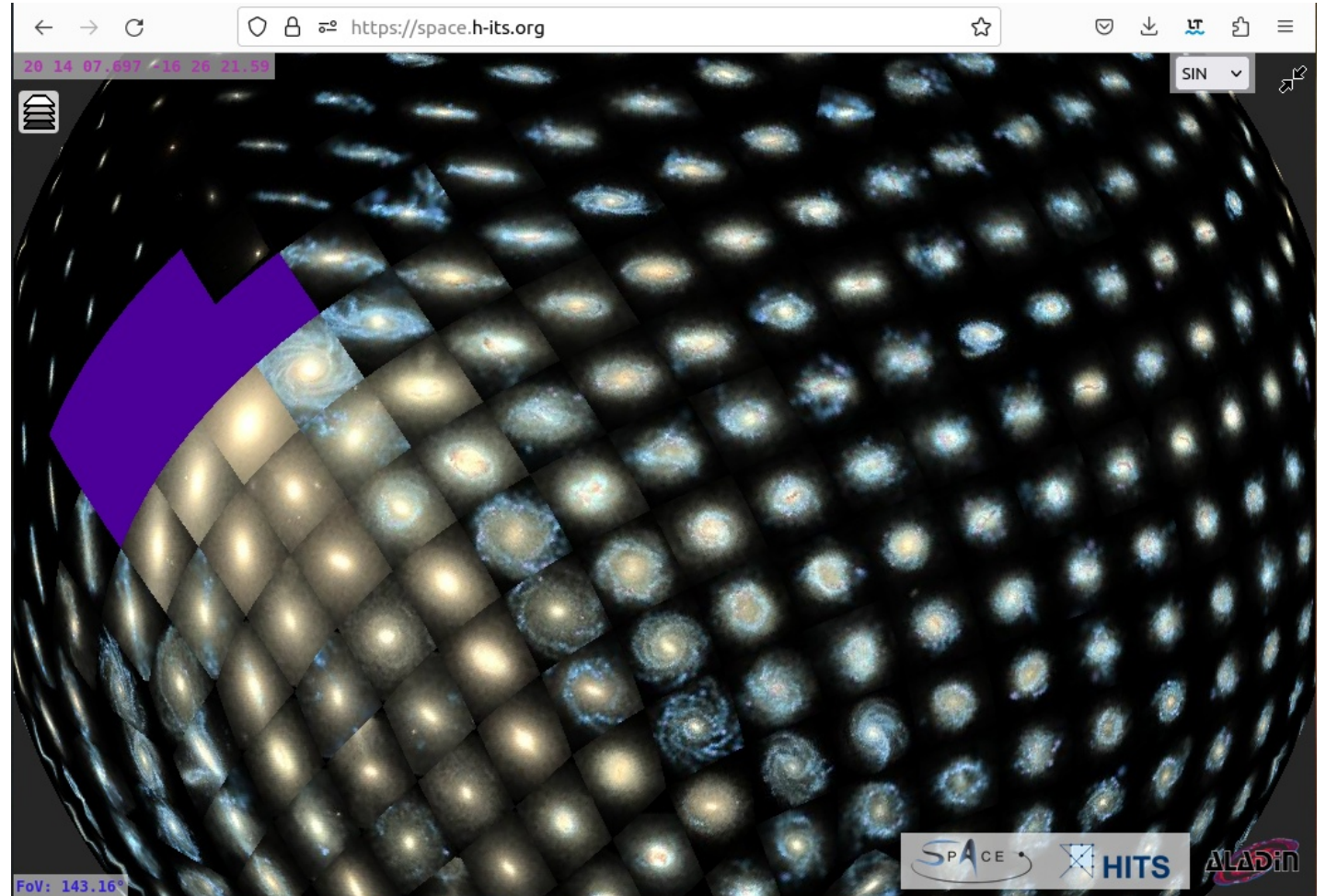
Hyperspherical Variational Convolutional Autoencoder



Representing the Model/Data with HiPS

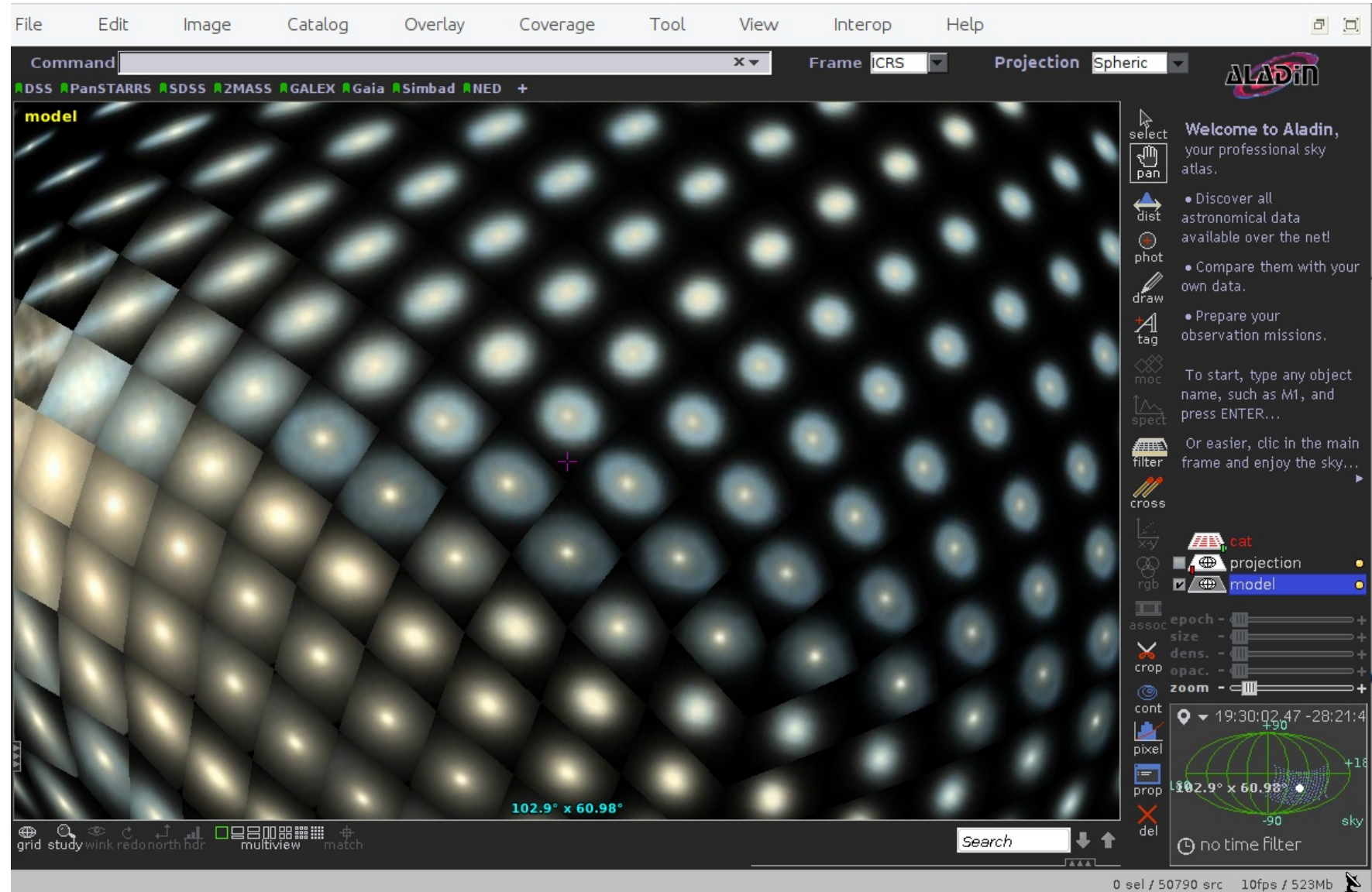


Demo with Aladin Lite :
<https://space.h-its.org>



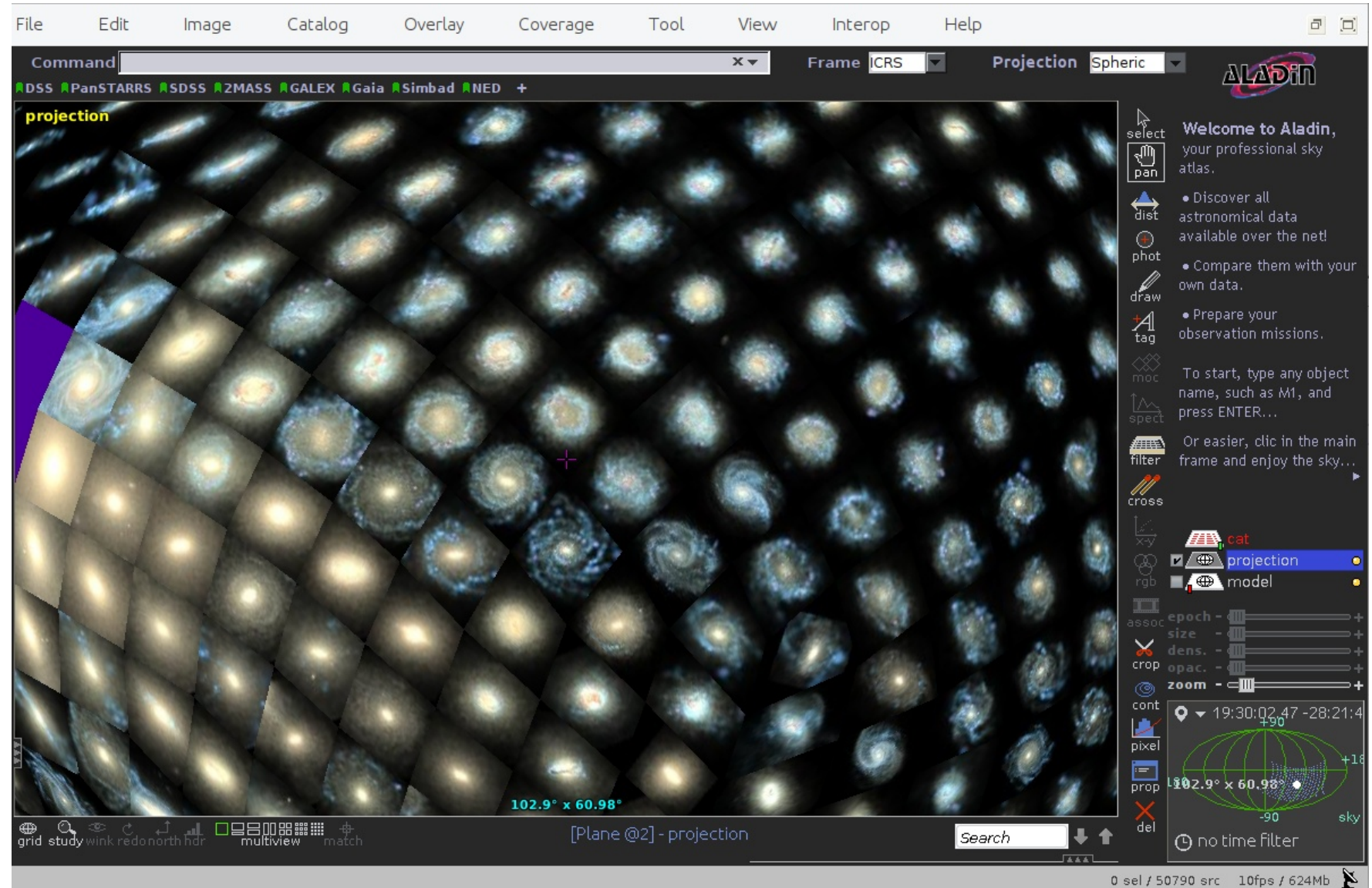
Aladin Kai

Model



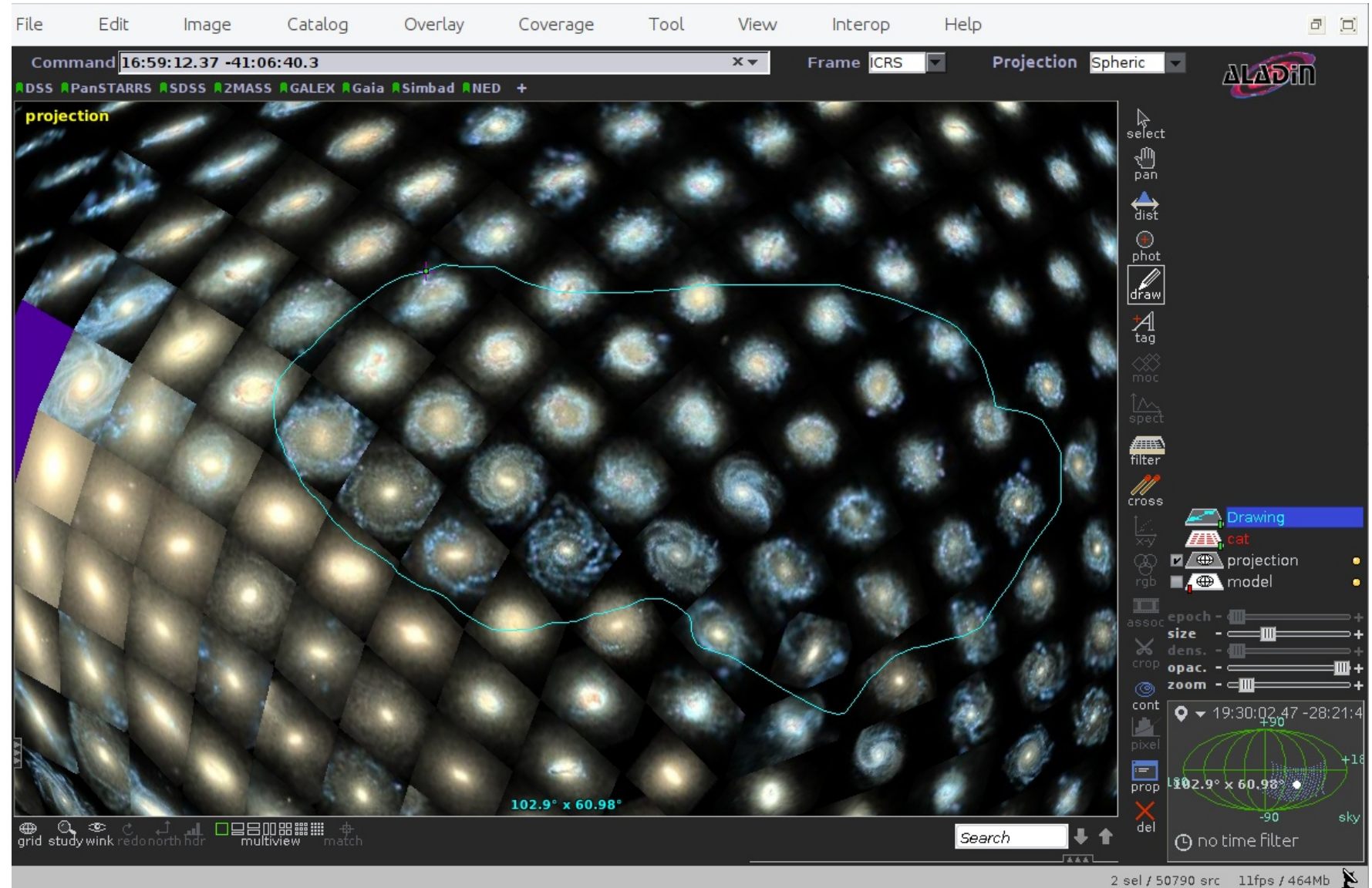
Aladin Kai

Projection of data



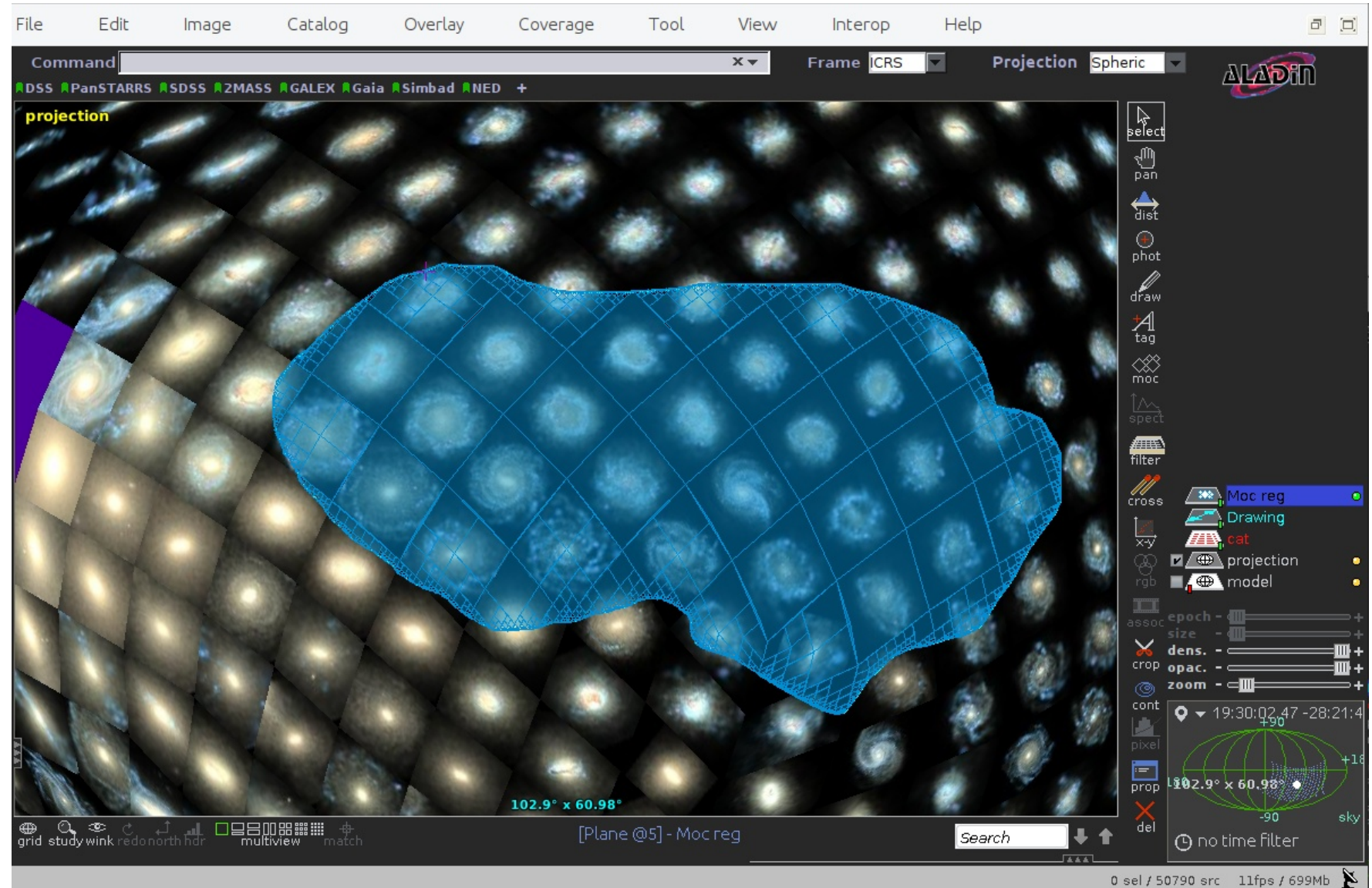
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Mark an area



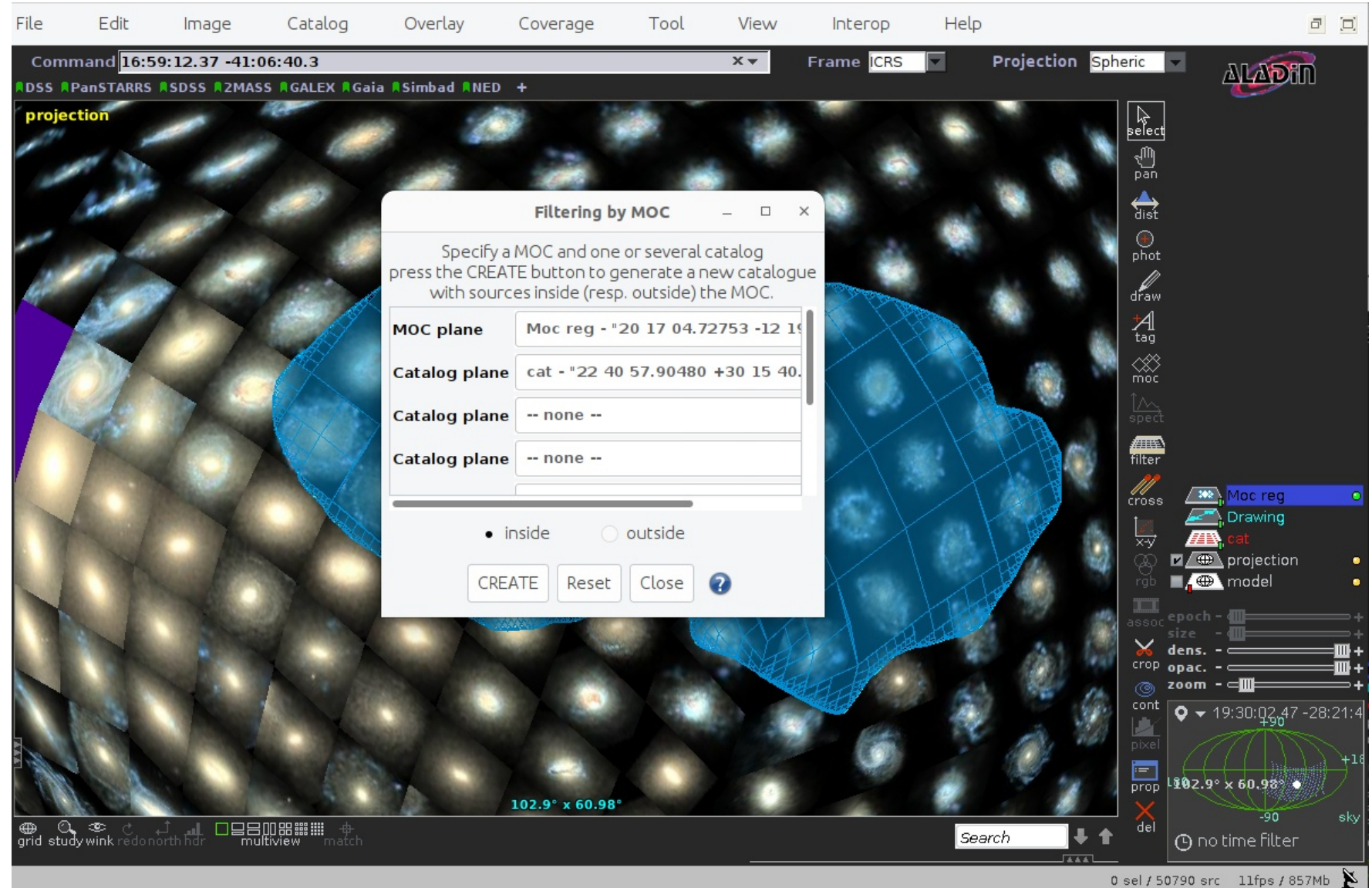
Aladin Kai

Create a MOC



Aladin Kai

Filter catalog by MOC



Aladin Kai

Individual catalog

The screenshot displays the Aladin Kai software interface. At the top, there is a menu bar with options: File, Edit, Image, Catalog, Overlay, Coverage, Tool, View, Interop, Help. Below the menu bar, a command line shows coordinates: 16:39:03.93 -31:33:38.3. The main window shows a galaxy field with a blue highlighted region containing numerous yellow and green squares representing objects. The interface includes a toolbar on the right with various tools like select, pan, dist, phot, draw, tag, moc, spect, filter, cross, rgb, assoc, crop, zoom, and a search bar. A data table is visible at the bottom of the window.

#	preview	simulation	snapshot data	subhalo id	subhalo data	RMSE	id	RA2000
1	https://space.h-its.org	illustris	135	93178	https://www.tng-pr	0.06377891	24641	268.206
2	https://space.h-its.org	illustris	135	434788	https://www.tng-pr	0.03704864	24653	270.558
3	https://space.h-its.org	illustris	135	460932	https://www.tng-pr	0.03230976	24681	265.329
4	https://space.h-its.org	illustris	135	364509	https://www.tng-pr	0.043696202	24721	299.951
5	https://space.h-its.org	illustris	135	423489	https://www.tng-pr	0.050968662	24757	293.395
6	https://space.h-its.org	illustris	135	458148	https://www.tng-pr	0.045221686	24771	250.225
7	https://space.h-its.org	illustris	135	437186	https://www.tng-pr	0.045671415	24793	279.140
8	https://space.h-its.org	illustris	135	496565	https://www.tng-pr	0.05500795	24838	249.140

Questions

Coordinates

- UCD?
- How to connect to the model used to project?

HiPS

- Re-using hierarchical representation of HiPS → unexpected behavior in VO tools

MOC

- Annotations?
- Semantics?
- Multi-mocs?

Acknowledgments

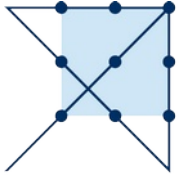
Kai Polsterer, Bernd Doser, Andreas Fehlner & Sebastian Trujillo-Gomez



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