4D (spatial-temporal-spectral) radio data in the VO

From Aladin (2D spatial) to Autoplot (temporal-spectral)

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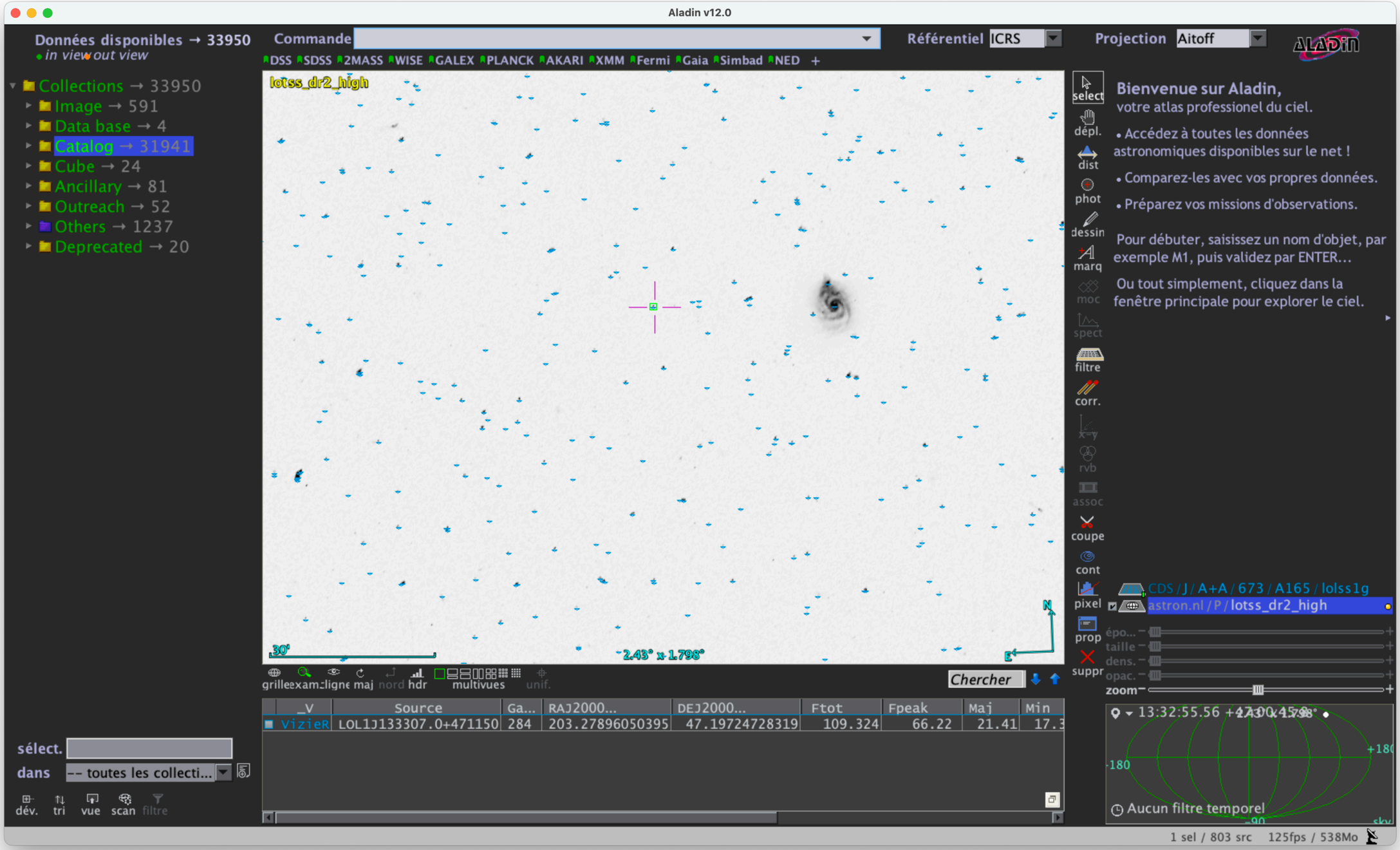
Use case

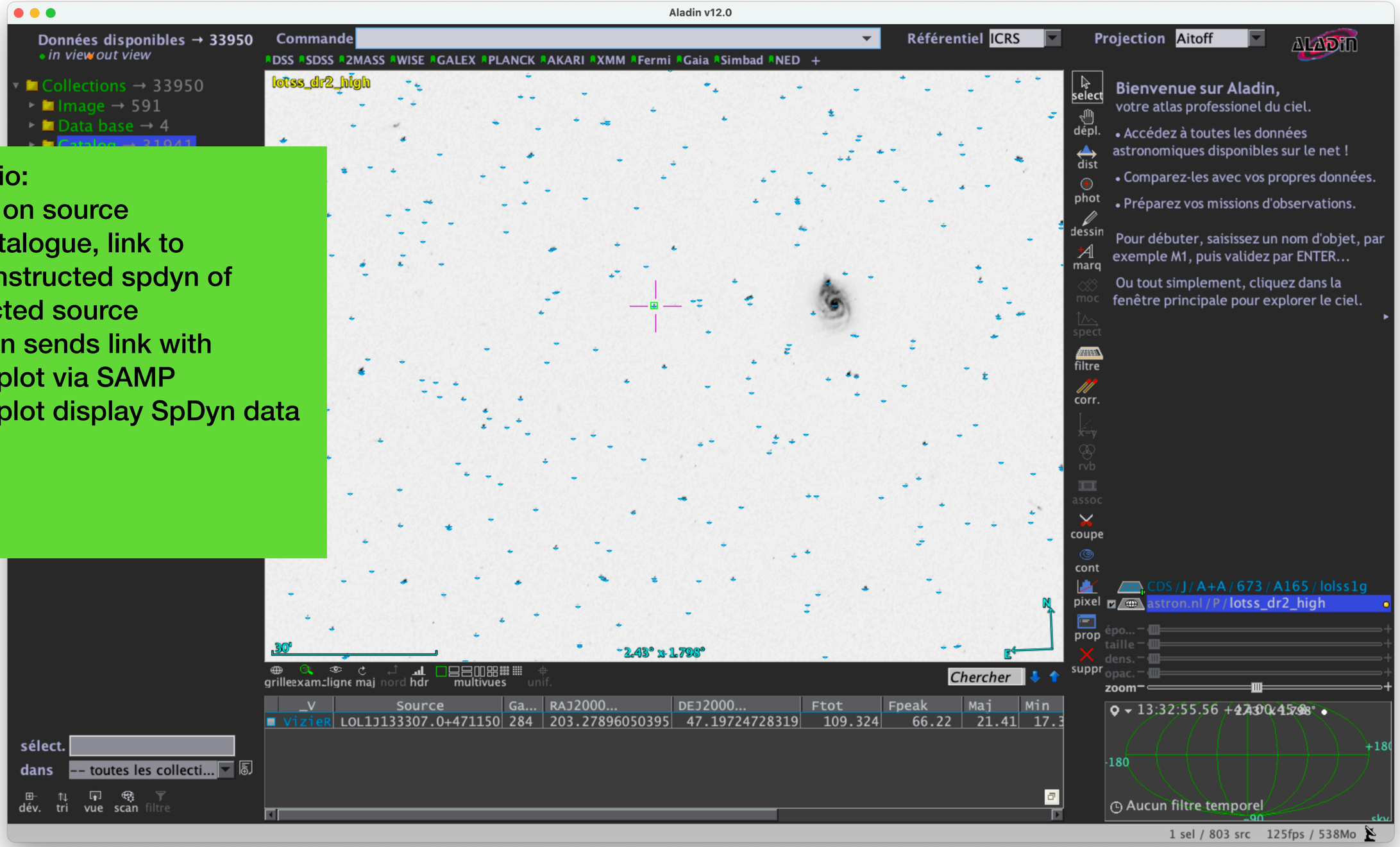
DynSpecMS analysis

- Radio interferometric visibility MS (MeasurementSets) usually contains 4D data: 2D spatial (Fourier domain), 1D temporal, 1D spectral (+ full polarization)
- Example of LOFAR sky survey (LoTSS): https://lofar-surveys.org/dr2_release.html
  visibilities => images (integrated in time and spectral domain) => sky survey => sources
- DynSpecMS method:
  visibilities => phase data in direction of each source of survey
  => synthetic beam

Aladin (background = LOFAR LoTSS, sources = LoLSS)



Aladin (background = LOFAR LoTSS, sources = LoLSS)



Scenario:

- click on source
- in catalogue, link to reconstructed spdyn of selected source
- Aladin sends link with Autoplot via SAMP
- Autoplot display SpDyn data

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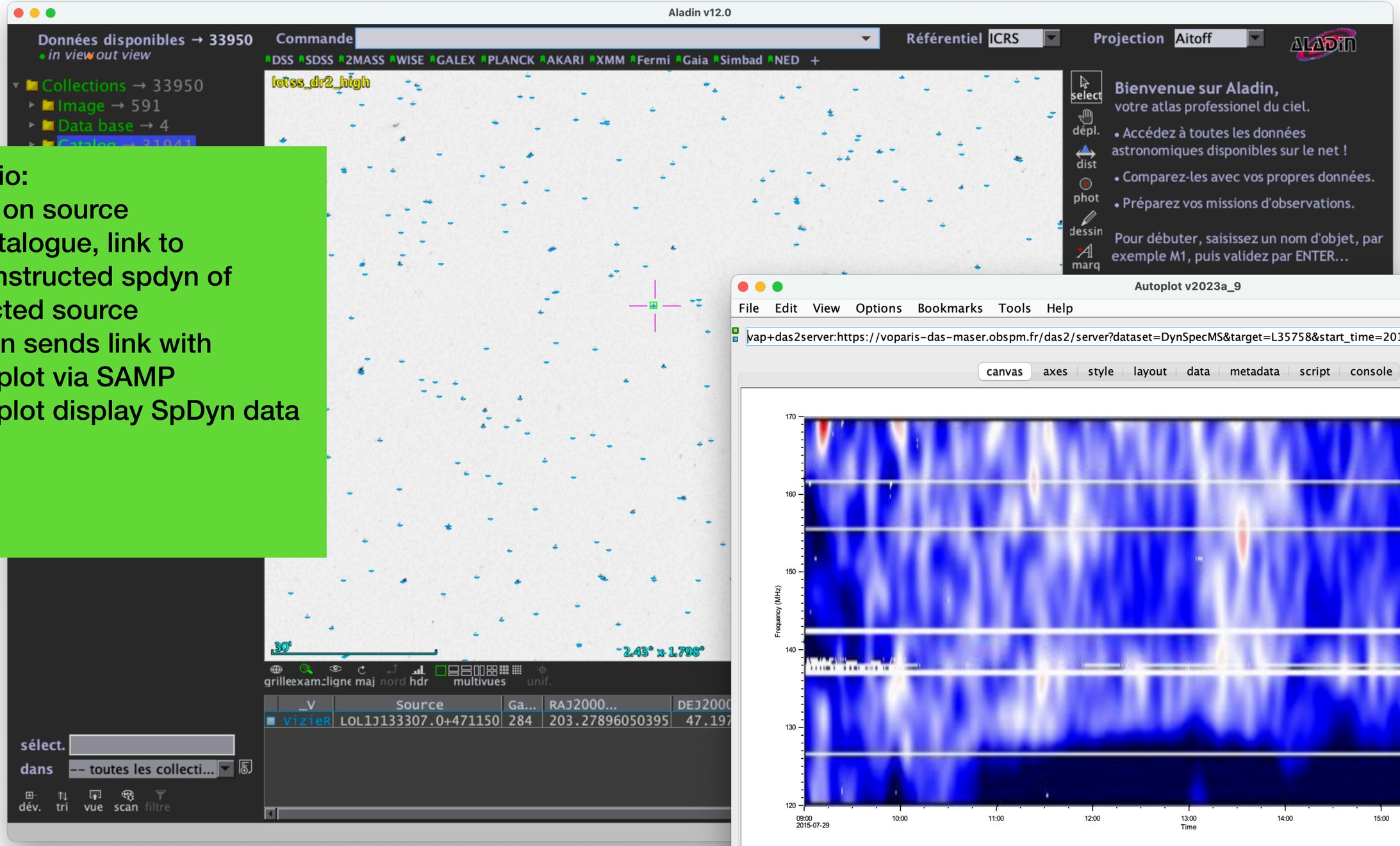

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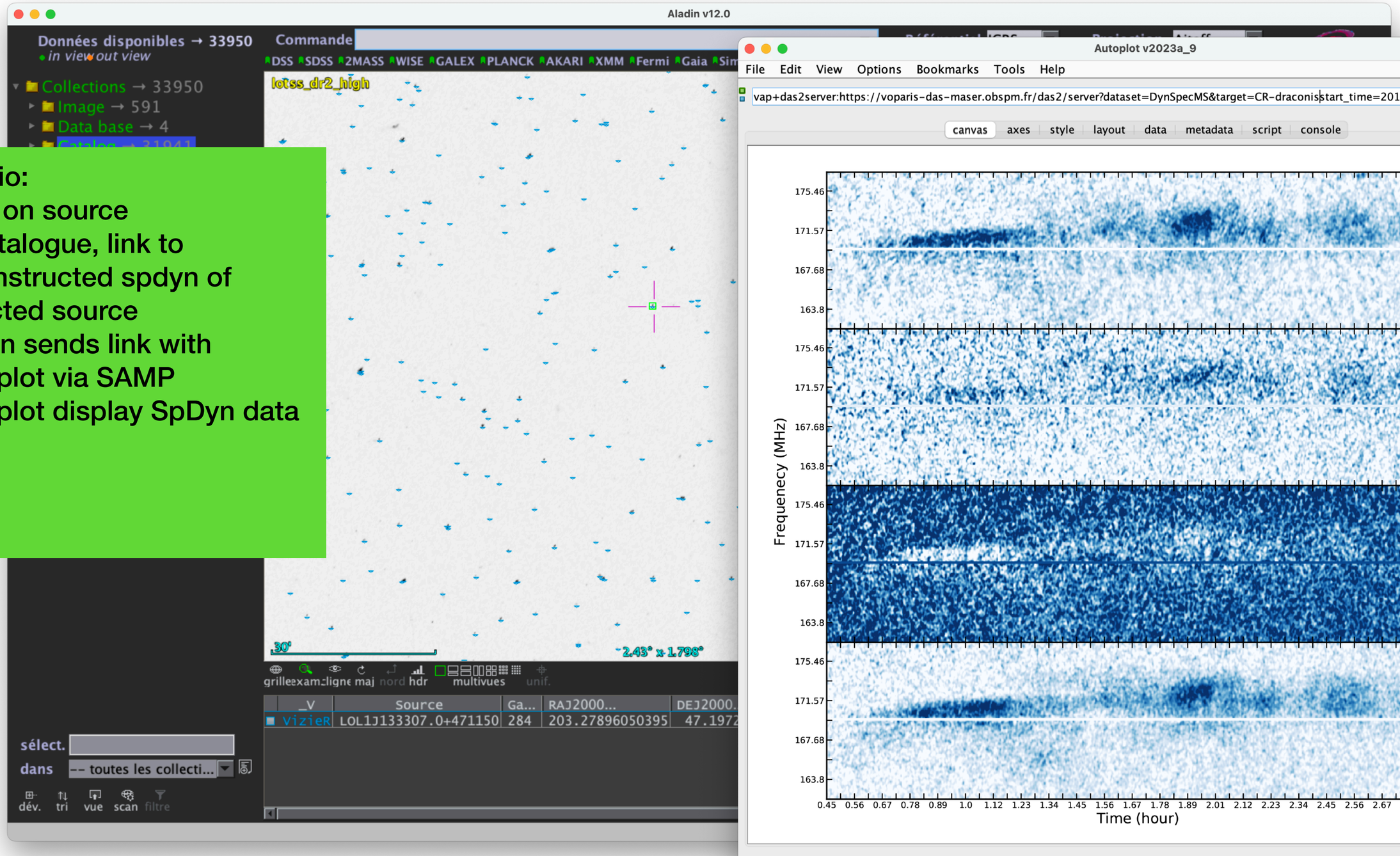

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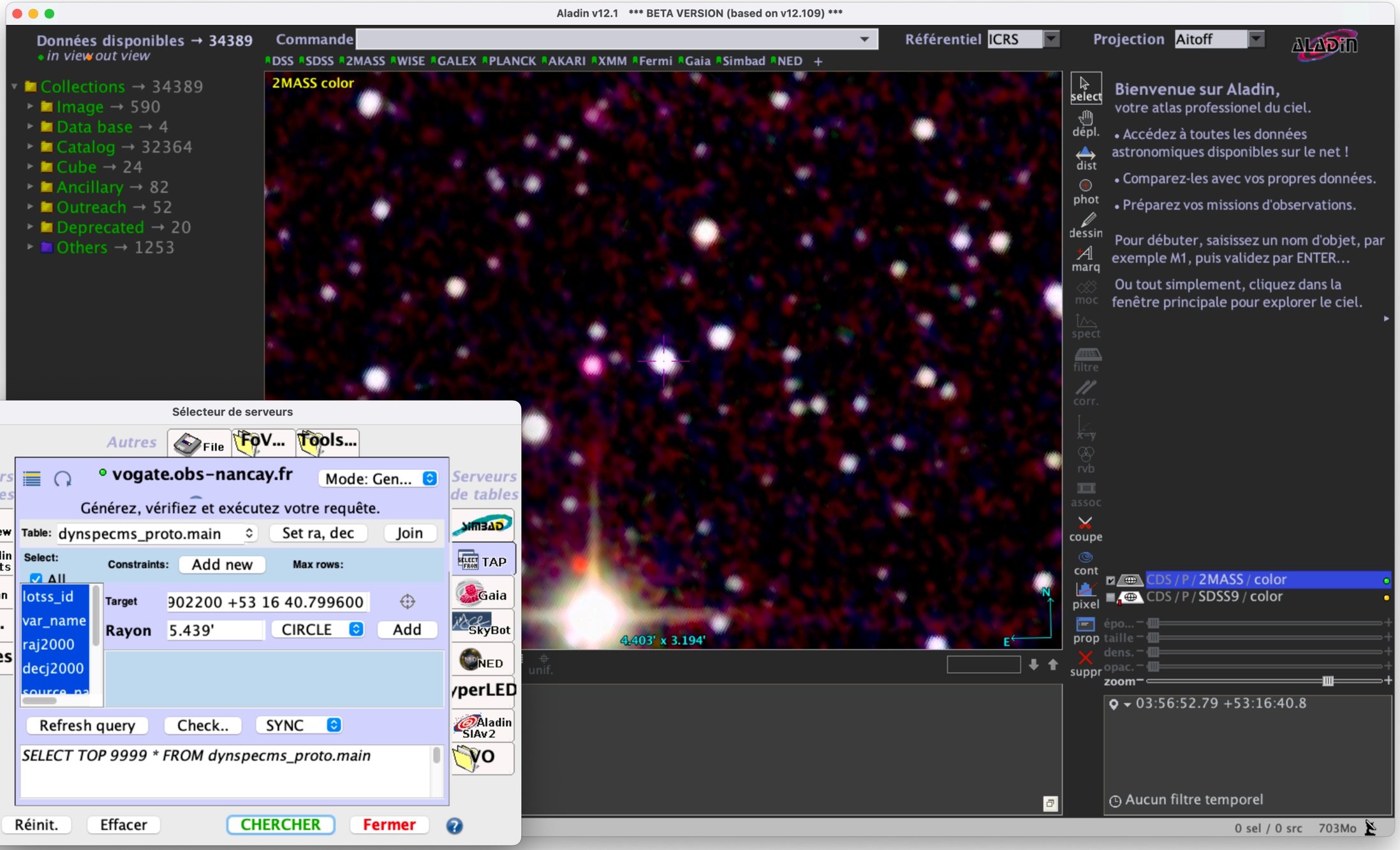
DynSpecMS prototype

Aladin-Autoplot

- Autoplot expects message-type = table.load.das2
- Need to adjust SAMP message-type in Aladin
- Several polarisation available (usually plots of I & V)
- Control image also available (reconstructed from time-spectral residual, to check if transients/features are actually from initial source)
- Publication in preparation, DynSpecMS datasets not yet publicly accessible.
- Demo with 2 known active stars.


Aladin v12.1 *** BETA VERSION (based on v12.109) ***
Données disponibles → 34389
in view out view
Collections → 34389
Image → 590
Data base → 4
Catalog → 32364
Cube → 24
Ancillary → 82
Outreach → 52
Deprecated → 20
Others → 1253
Commande
Référentiel ICRS
Projection Aitoff
DSS SDSS 2MASS WISE GALEX PLANCK AKARI XMM Fermi Gaia Simbad NED +
2MASS color
Bienvenue sur Aladin,
votre atlas professionel du ciel.
• Accédez à toutes les données astronomiques disponibles sur le net !
• Comparez-les avec vos propres données.
• Préparez vos missions d'observations.
Pour débuter, saisissez un nom d'objet, par exemple M1, puis validez par ENTER...
Ou tout simplement, cliquez dans la fenêtre principale pour explorer le ciel.
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Générez, vérifiez et exécutez votre requête.
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Sloan
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SIMBAD
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Gaia
SkyBot
NED
HyperLEDA
Aladin SIAv2
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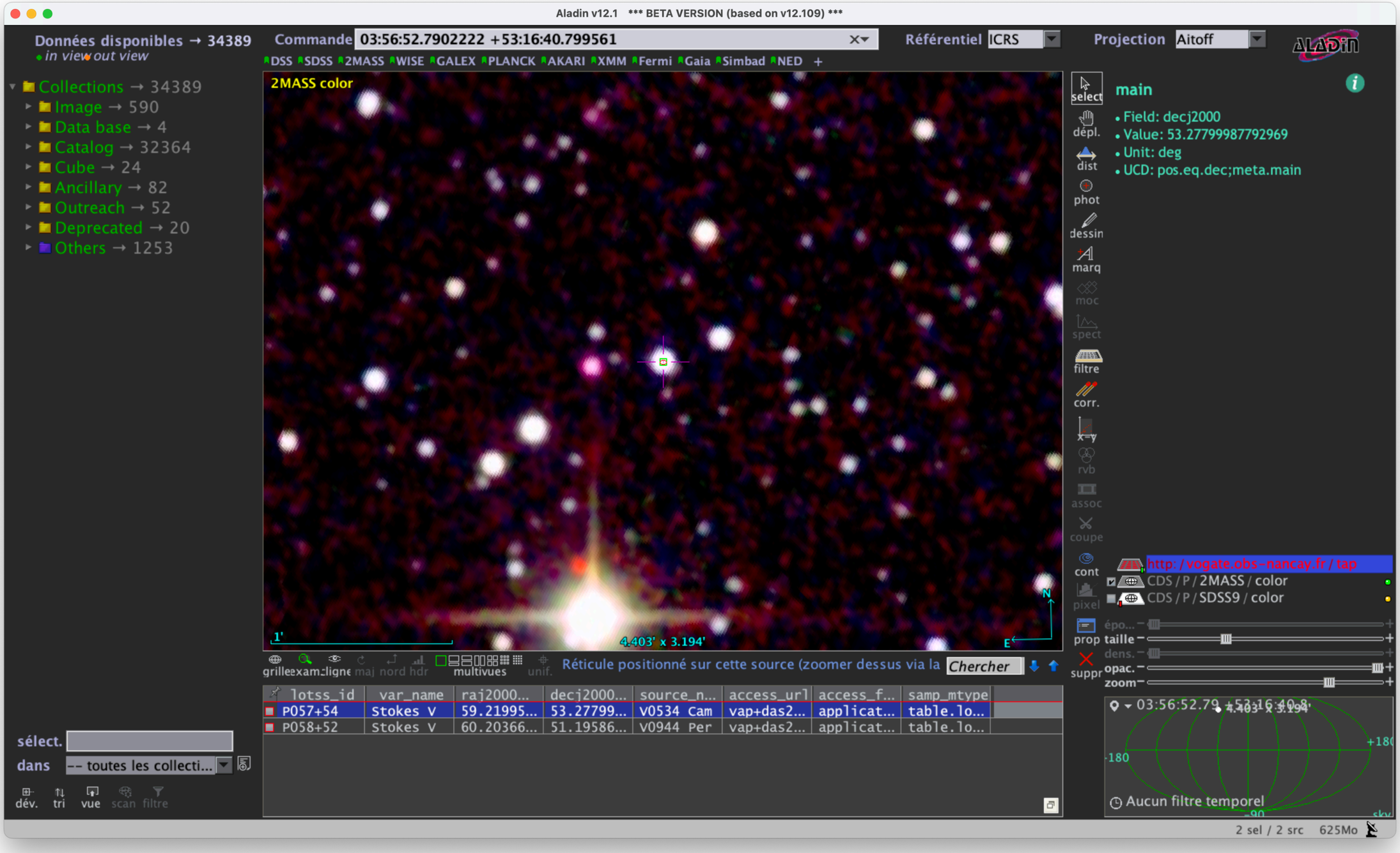
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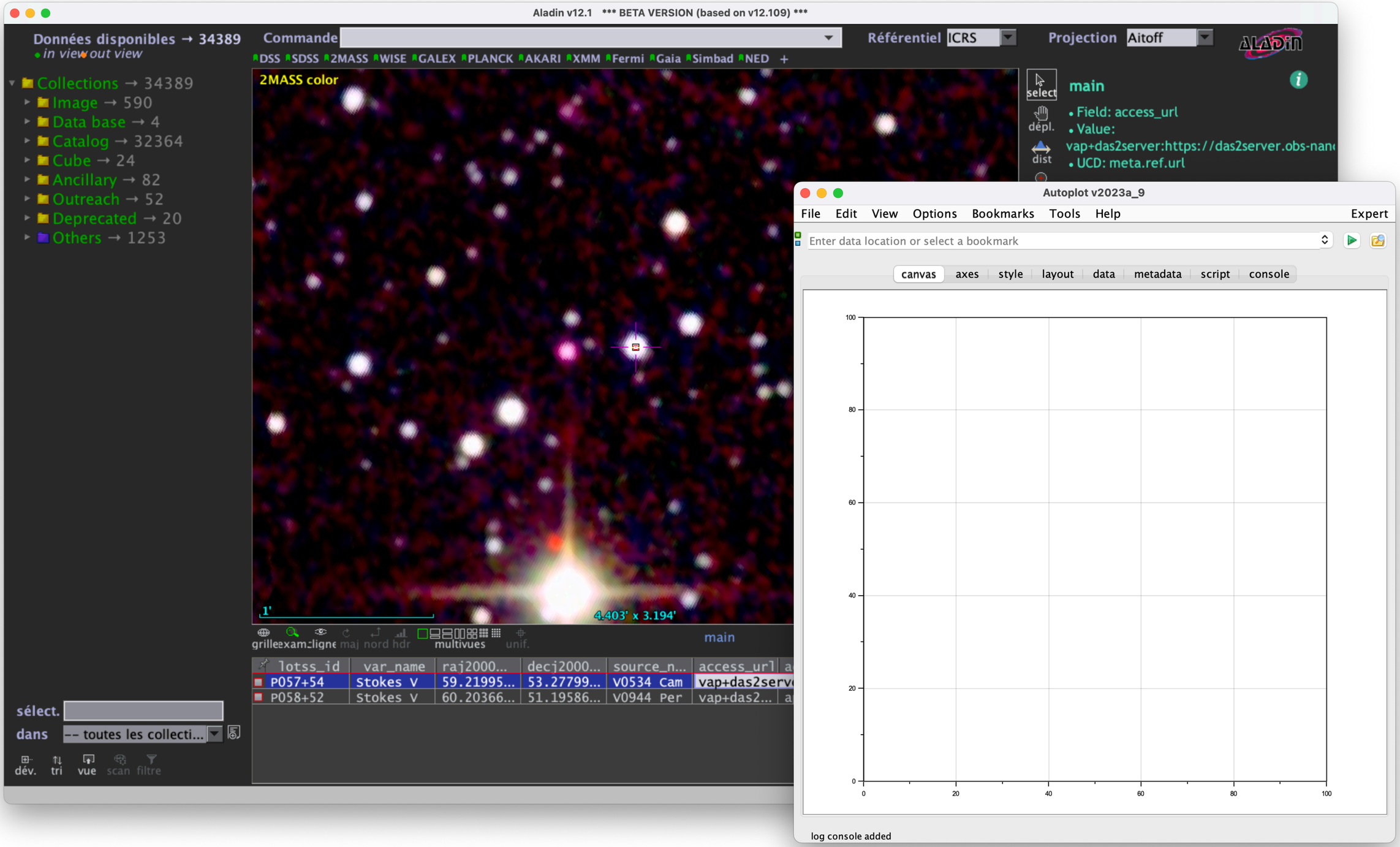
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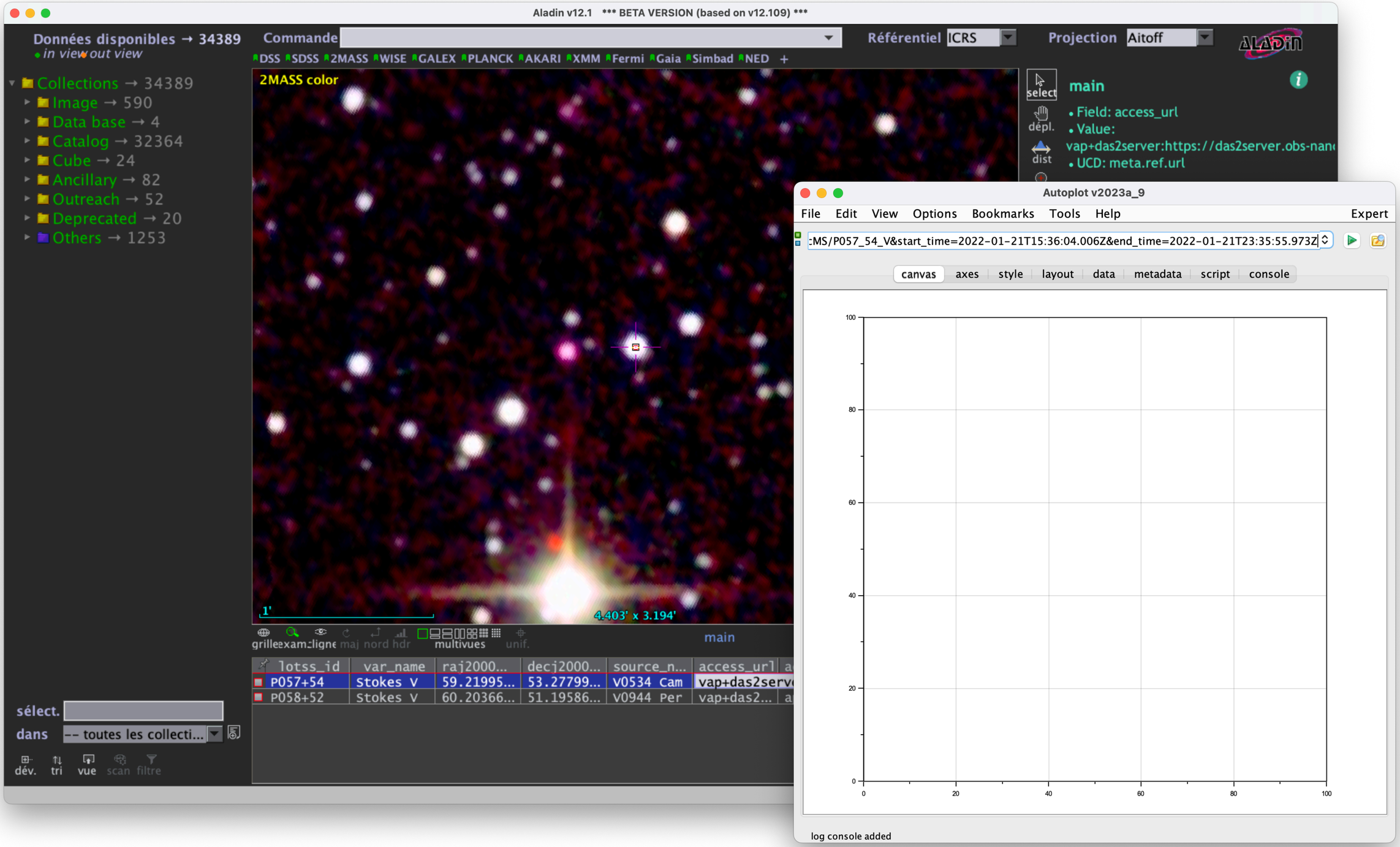
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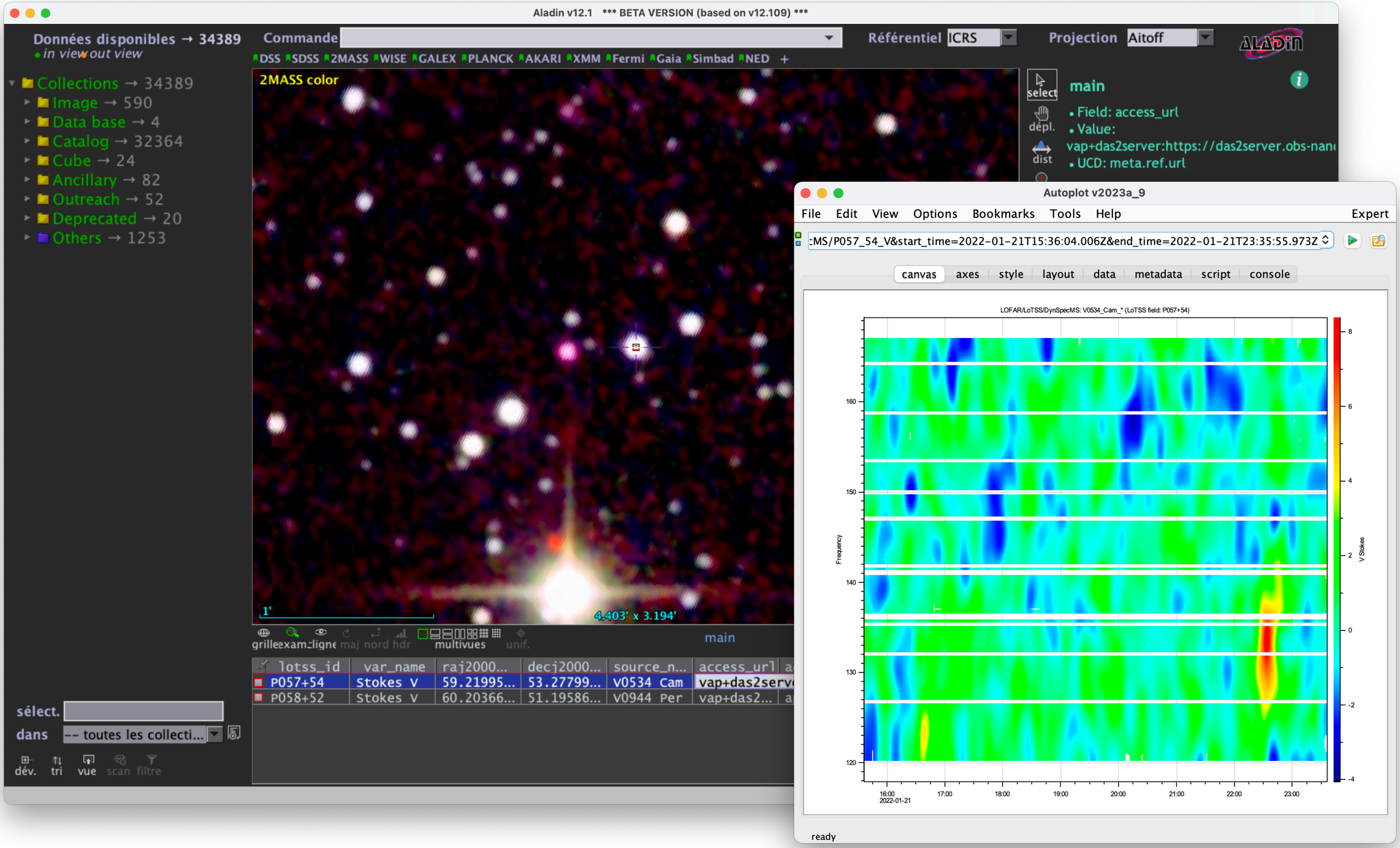
log console added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canvas axes style layout data metadata script console
LOFAR/LoTSS/DynSpecMS: V0534_Cam_* (LoTSS field: P057+54)
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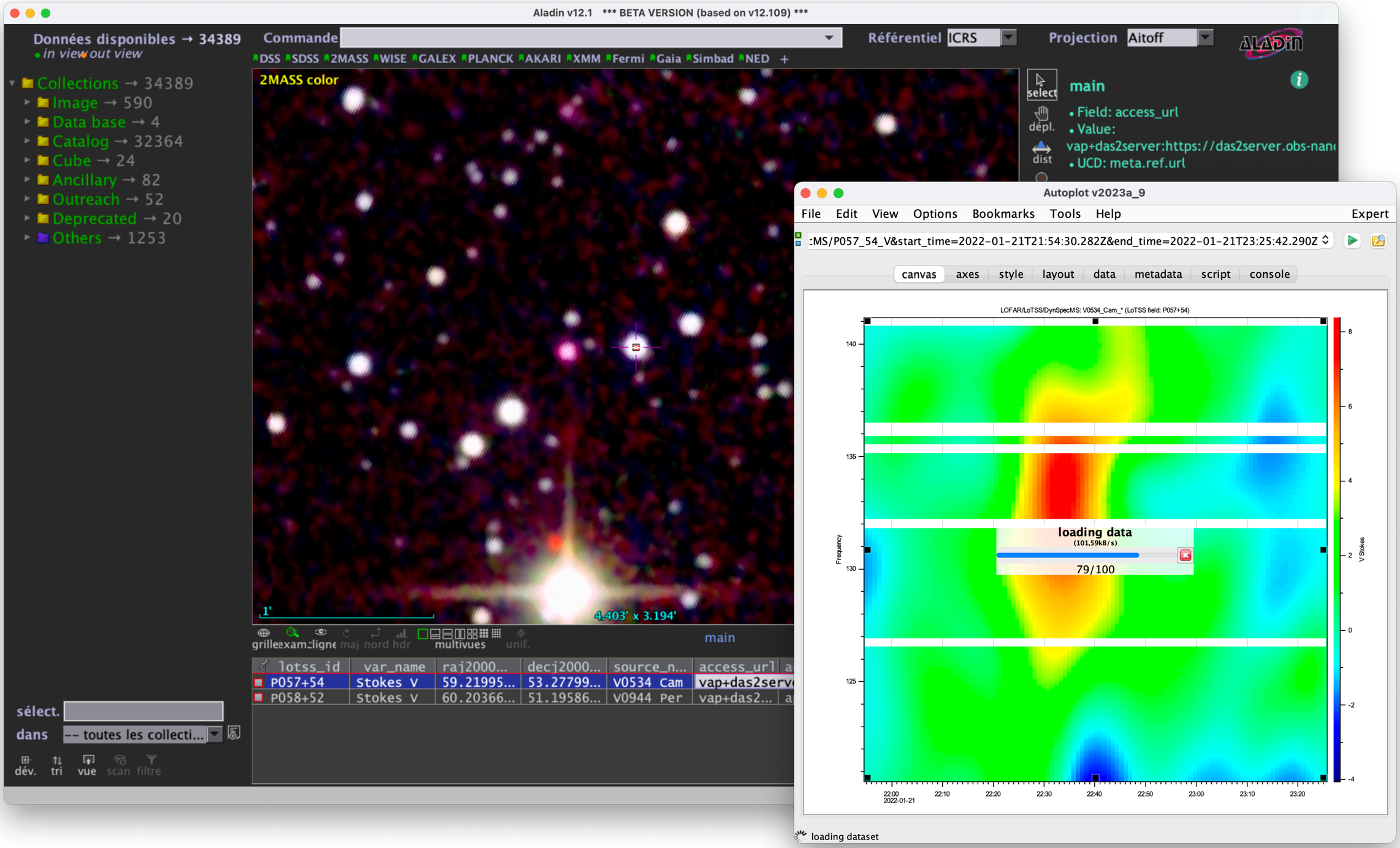
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canvas axes style layout data metadata script console
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