

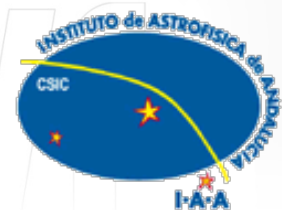
SIA v2 Access Methods

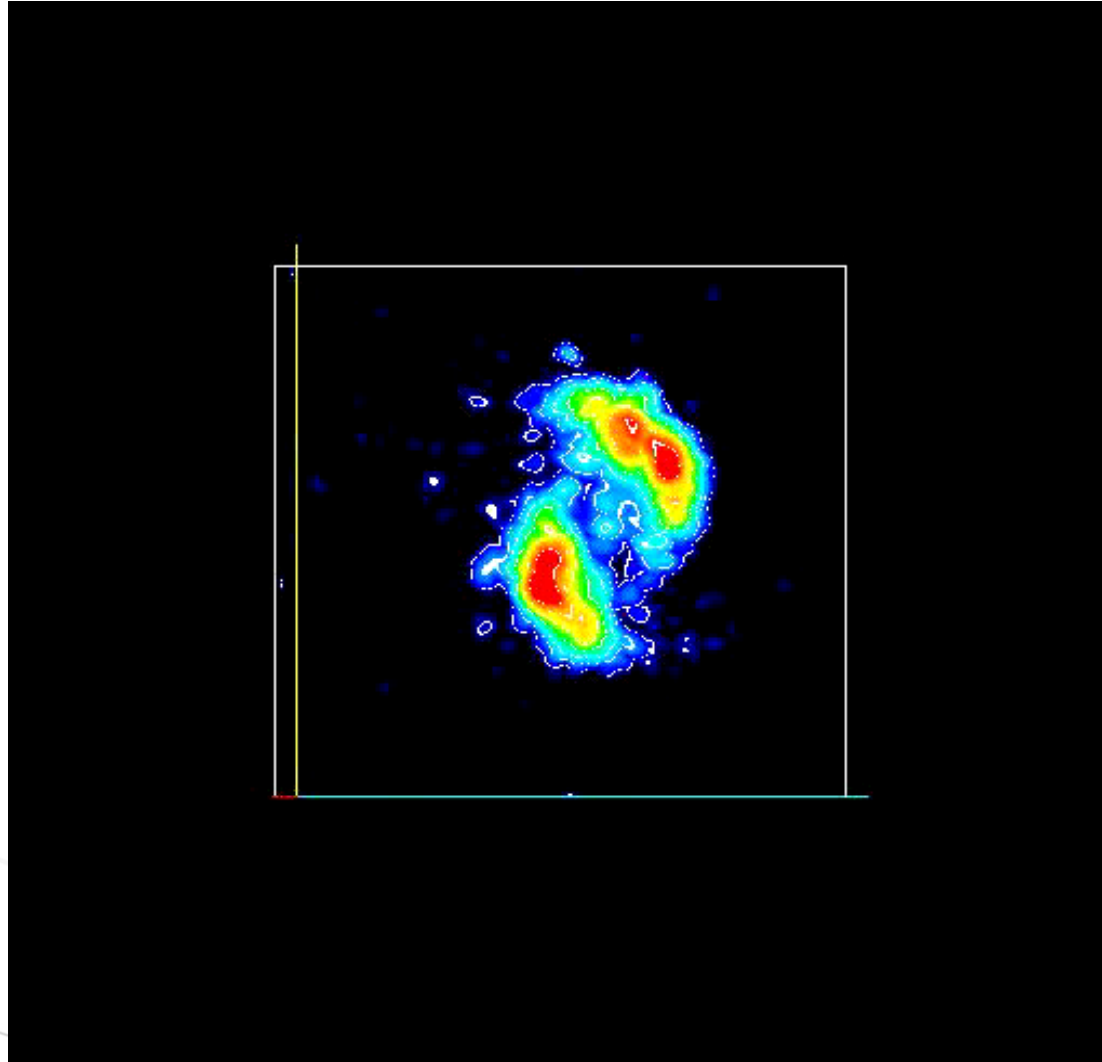
Generation of virtual subproducts from 3D Datasets

Splinters Session

Jose Enrique Ruiz
IAA-CSIC

October 20th 2011
2011 IVOA Fall Interop Meeting - Pune





M. Kríps - ESO 3D2008 Workshop - Garching

The next generation of archives

Much wider FOV and spectral coverage

- Huge sized datasets (~ tens TB)
- Big Data science highly dependent on I/O data rates
- Subproducts as **virtual data** generated on-the-fly

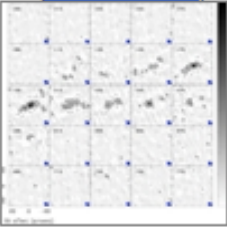
Archives should evolve from data providers into **virtual data** and **services providers**, where web services may help to solve bandwidth issues.

Derived datasets from velocity cubes

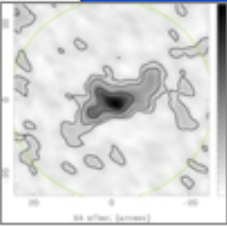
Images

12CO21

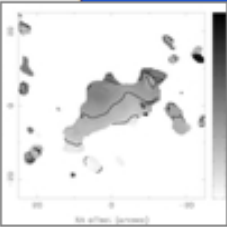
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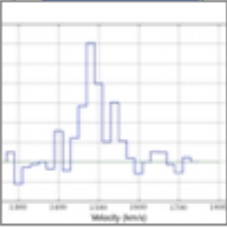
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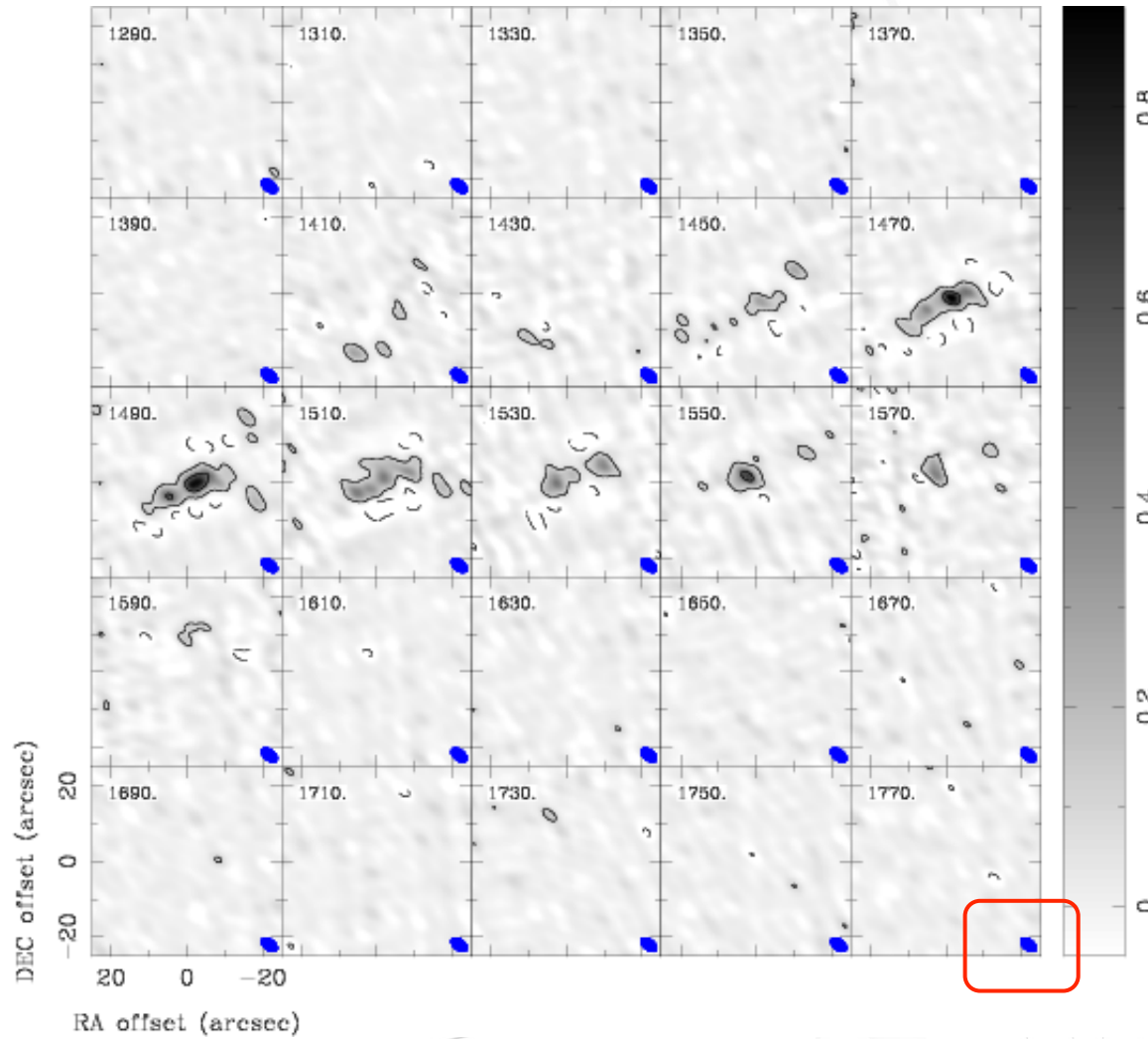
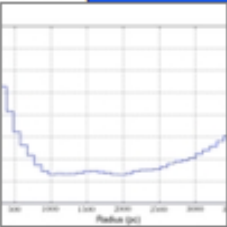
mom1: [\(download data\)](#)



sp: [\(download data\)](#)



distrad: [\(download data\)](#)



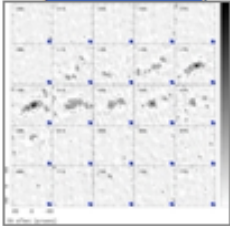
Channel Map

Images

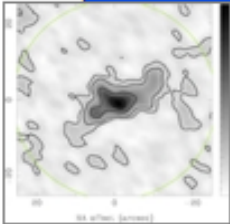
Derived datasets from velocity cubes

12CO21

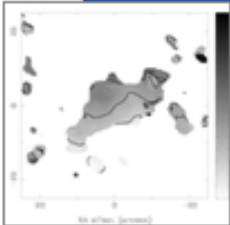
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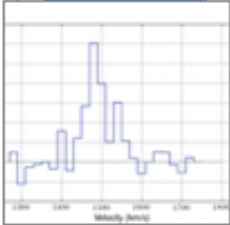
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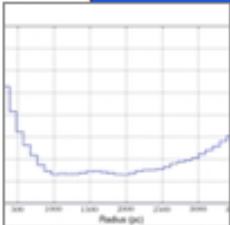
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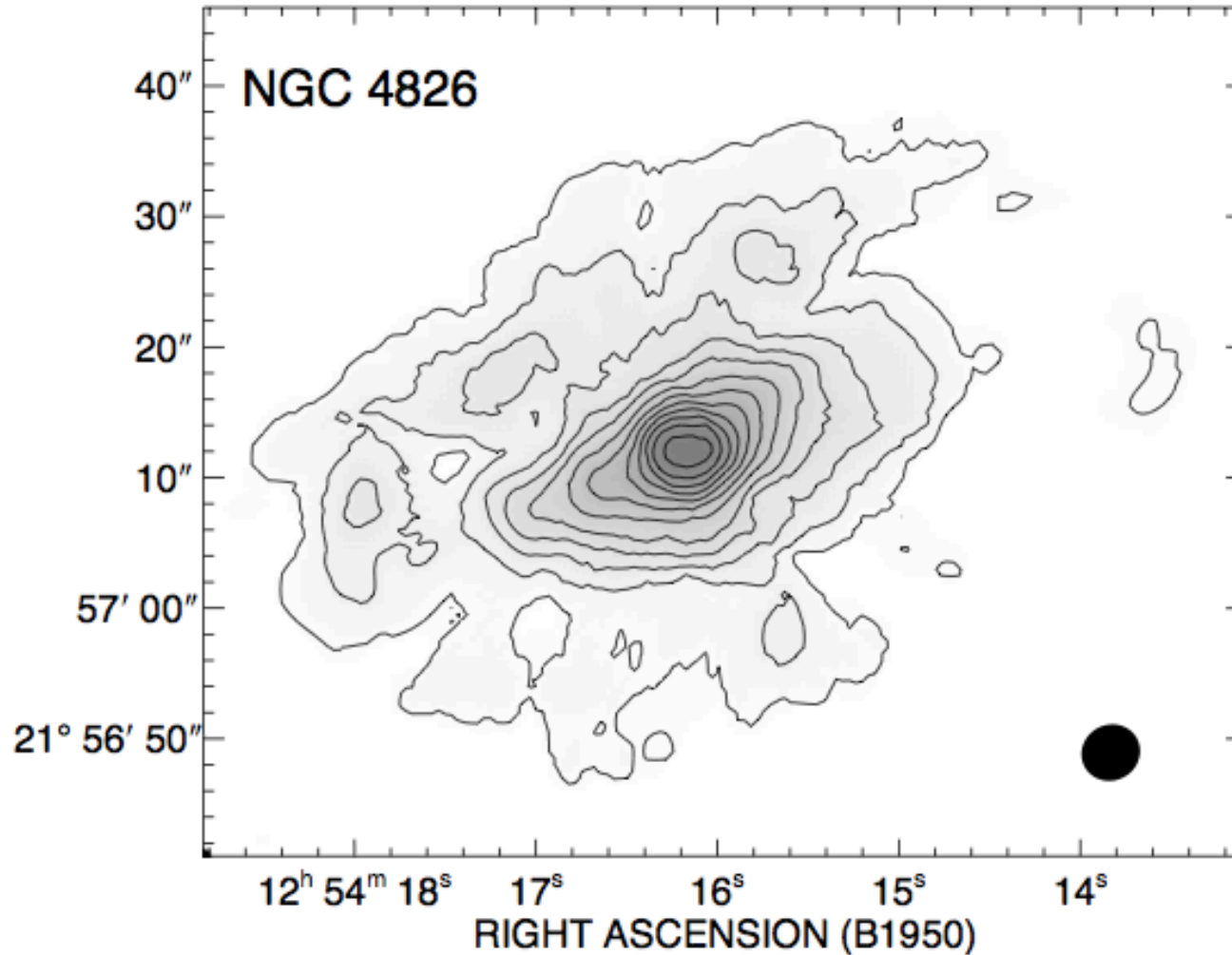
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distrad: [\(download data\)](#)



Integrated Flux Map

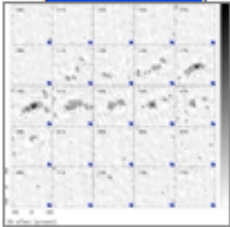


Derived datasets from velocity cubes

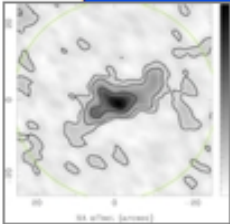
Images

12CO21

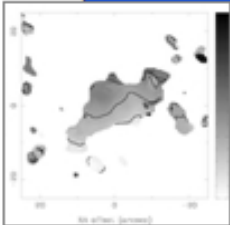
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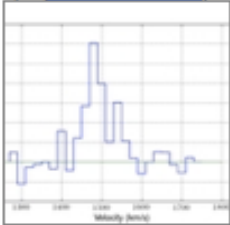
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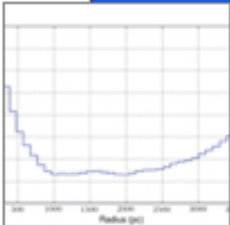
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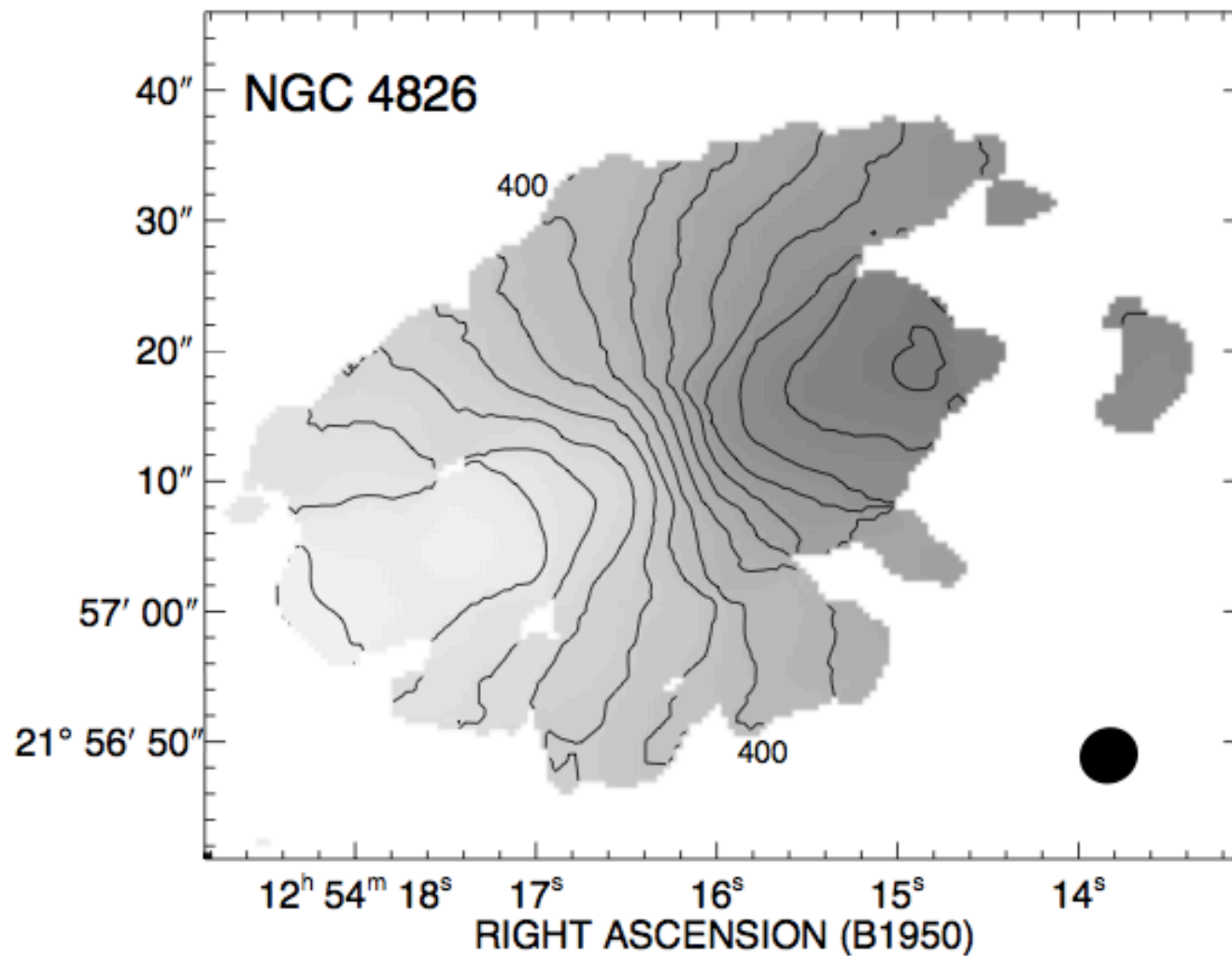
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distrad: [\(download data\)](#)



velocity Map

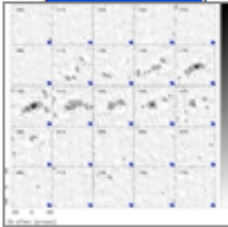


Images

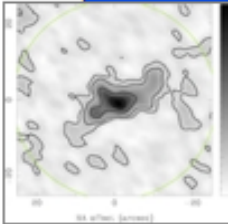
Derived datasets from velocity cubes

12CO21

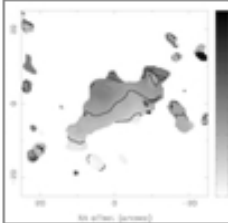
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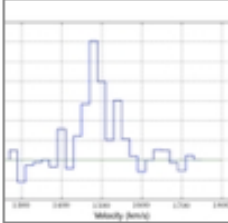
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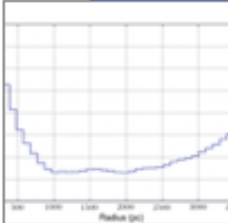
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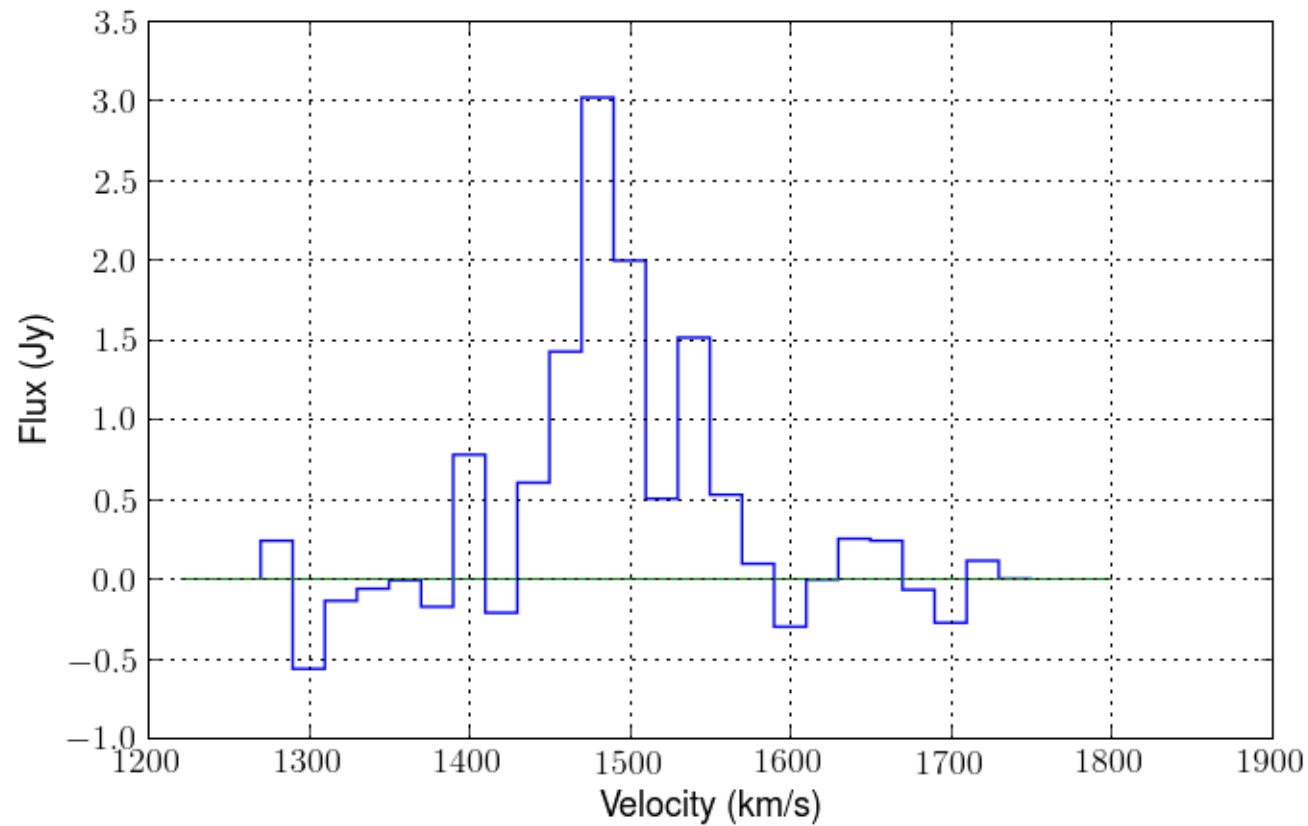
sp: [\(download data\)](#)



distrad: [\(download data\)](#)



Integrated Spectral Profile

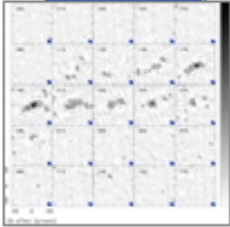


Images

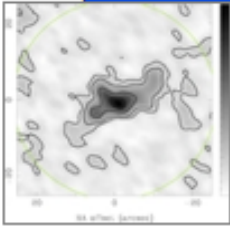
Derived datasets from velocity cubes

12CO21

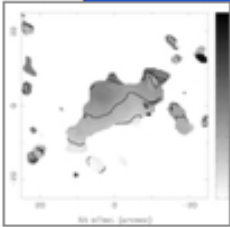
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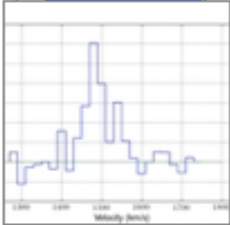
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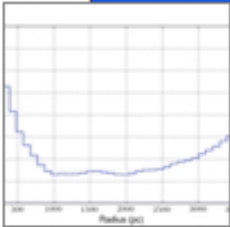
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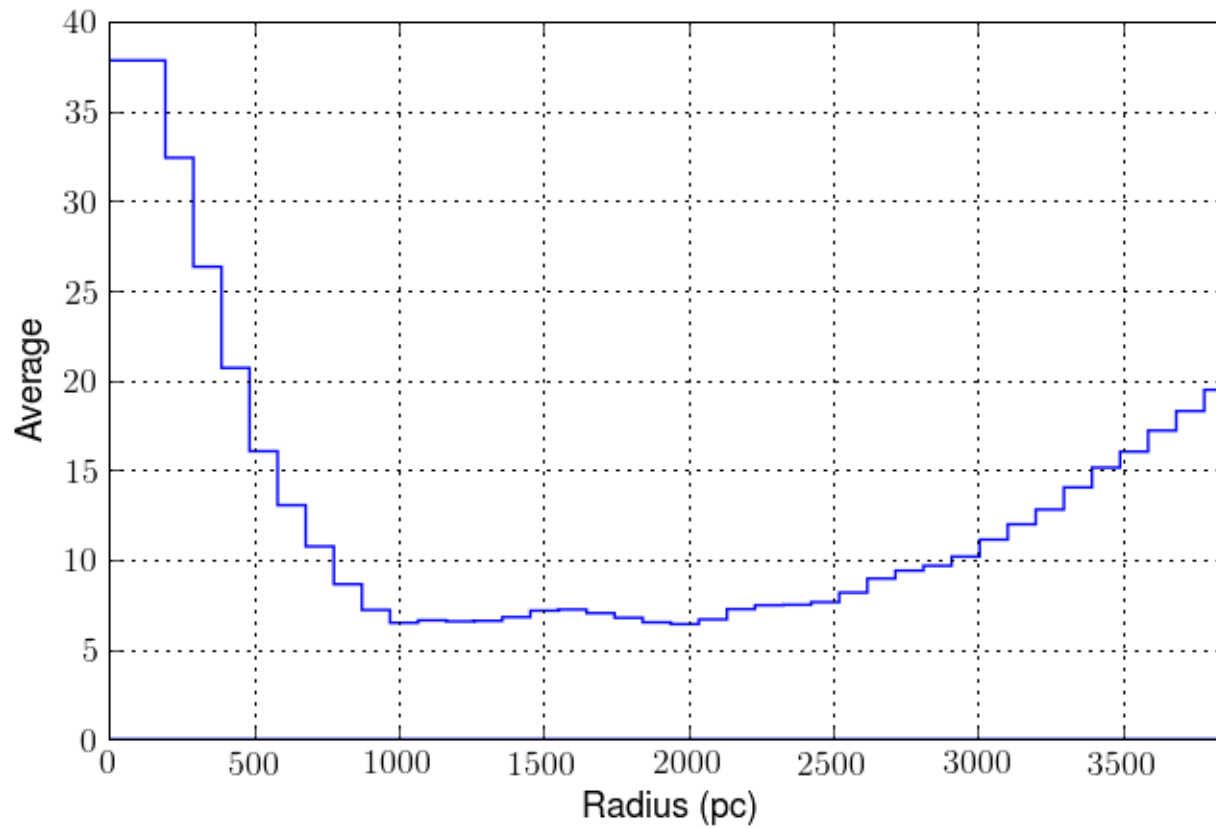
sp: [\(download data\)](#)



distrad: [\(download data\)](#)



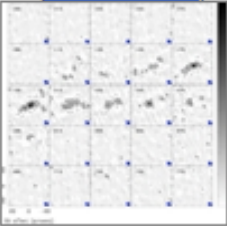
Radial Profile



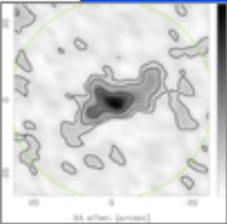
Images

12CO21

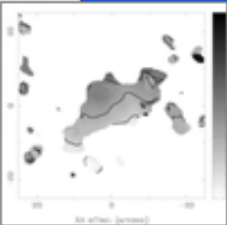
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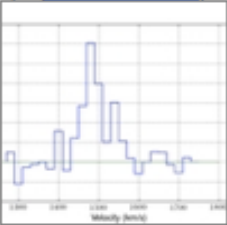
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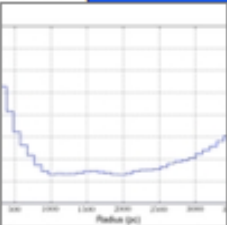
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sp: [\(download data\)](#)

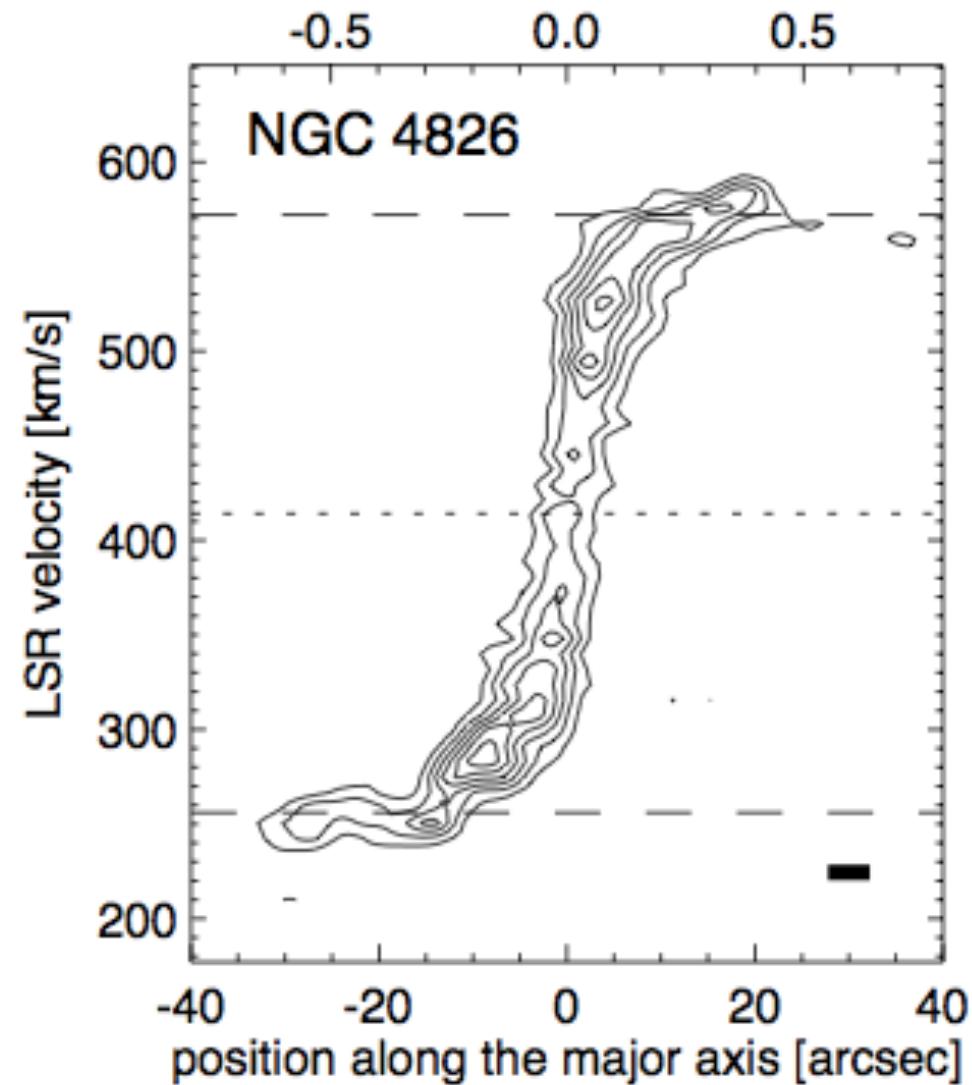


distrad: [\(download data\)](#)



Derived datasets from velocity cubes

Position velocity Map

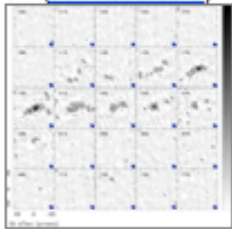


Derived datasets from velocity cubes

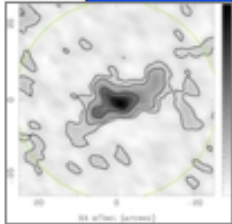
Images

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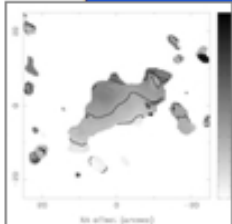
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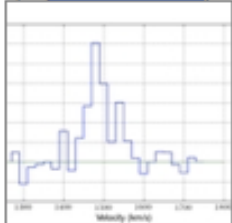
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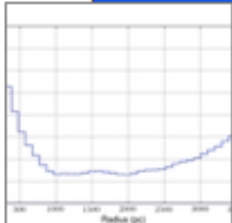
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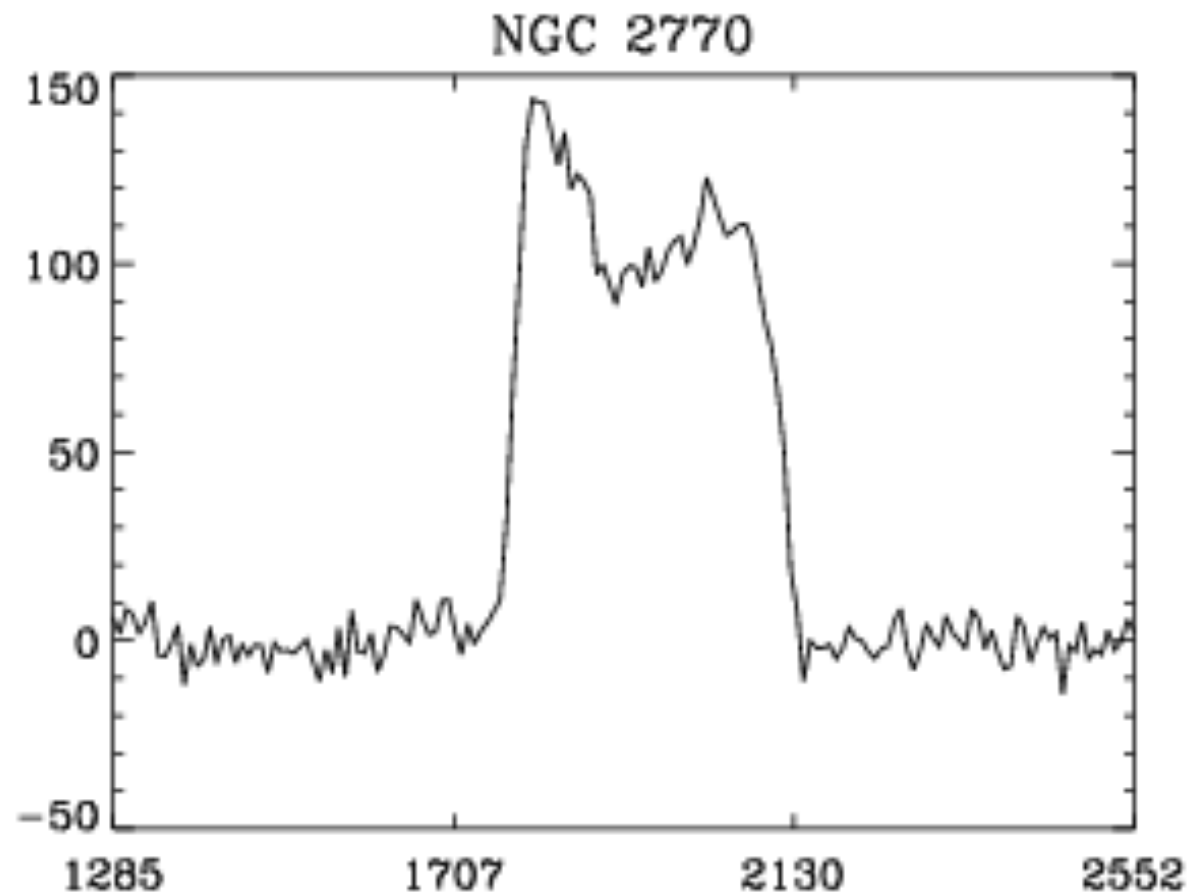
sp: [\(download data\)](#)



distrad: [\(download data\)](#)



Spectrum Extraction

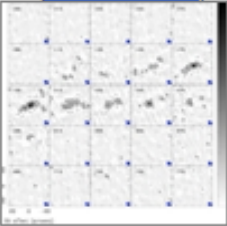


Derived datasets from velocity cubes

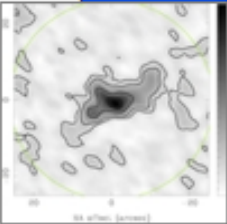
Images

12CO21

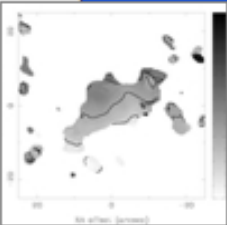
ch: ([download data](#))



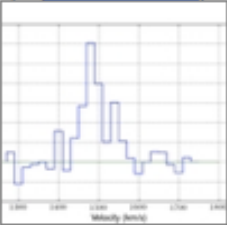
mom0: ([download data](#))



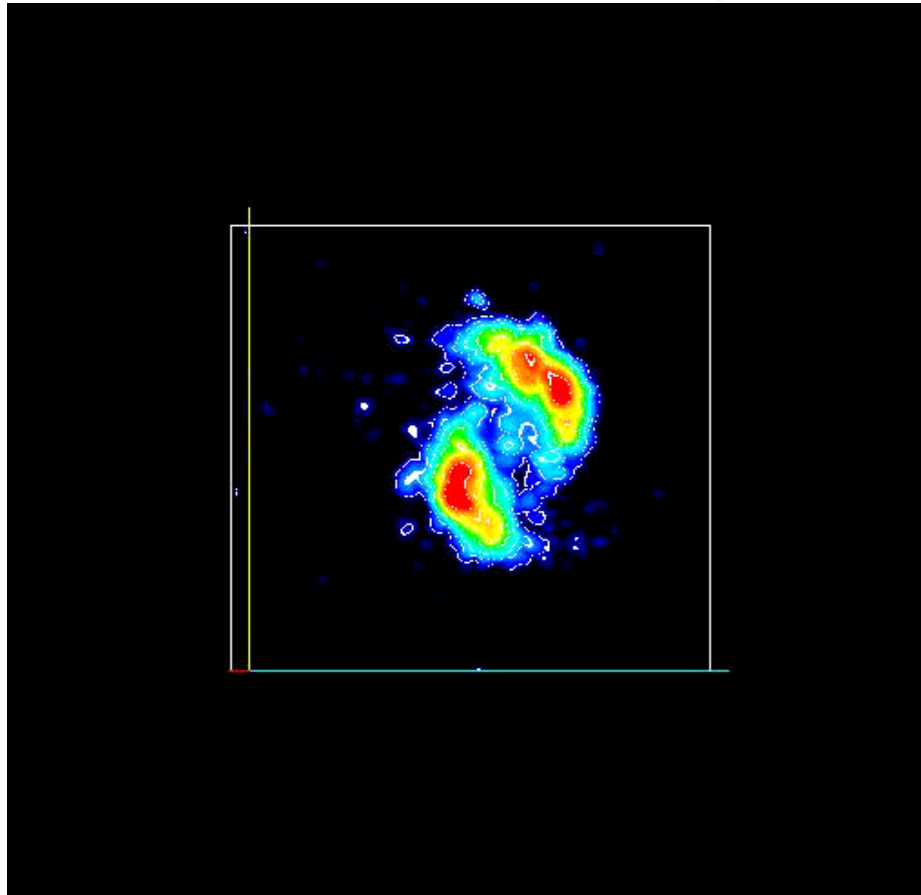
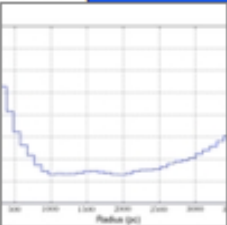
mom1: ([download data](#))



sp: ([download data](#))



distrad: ([download data](#))



3D subcube cutout

variants

- Reprojection
- Flipped axis

- Whole Dataset
- Cutout 3D
 - subcube
 - reprojection (spatial, frequency, velocity)
 - flipped axis, inverted axis
- Cutout 2D planes
 - orthogonal or any direction
 - subplane or the whole plane
 - reprojection (spatial, frequency, velocity)
 - flipped axis, inverted axis

- Spectrum extraction
 - point
 - aperture region
- 2D projection
 - average, median, etc.
 - momentum: zero, one, two
- 2D projection + spatial reprojection
 - radial profile