

First Successful Simultaneous Imaging/ Beam Formed Observations

LSM on April 28, 2010

Anastasia Alexov

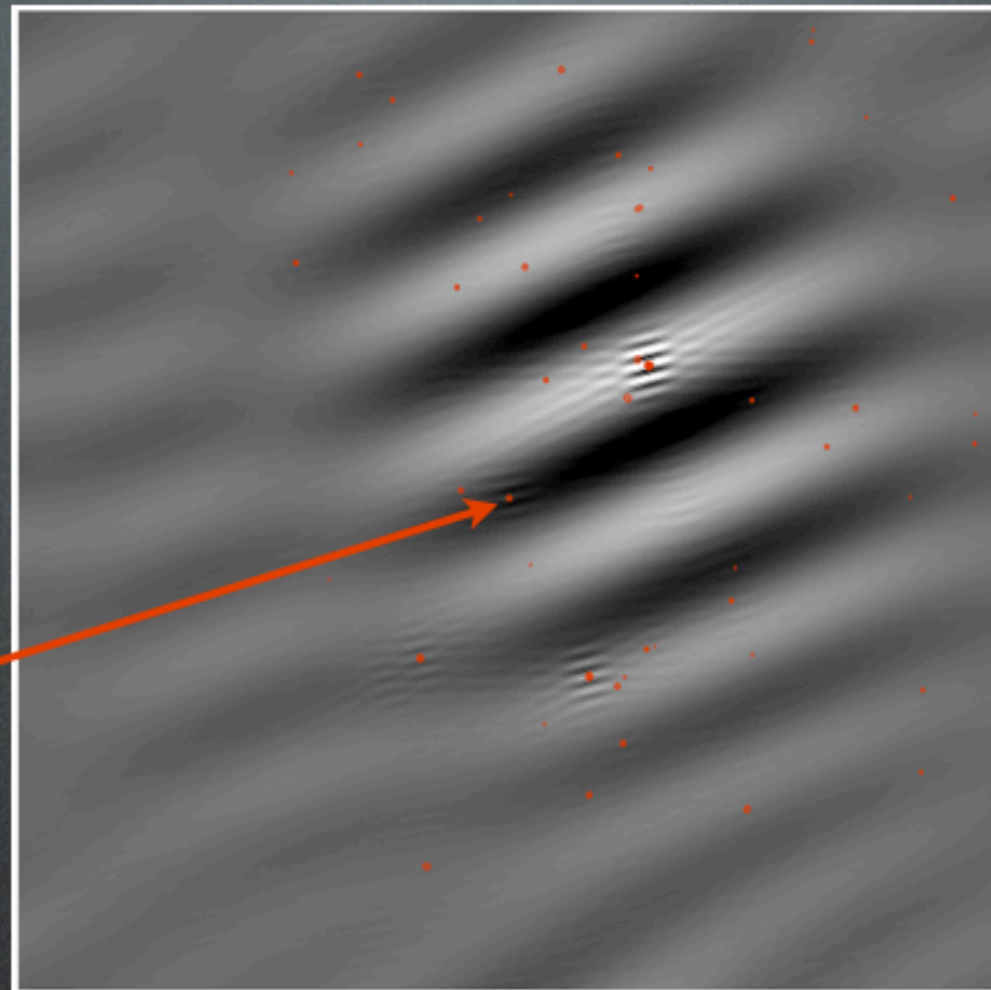
& The Pulsar Working Group & ASTRON SW Group

With special thanks to:

John Swinbank, George Heald, Joris van Zwieten and Evert Rol

2-hr Simultaneous Data L2010_06708

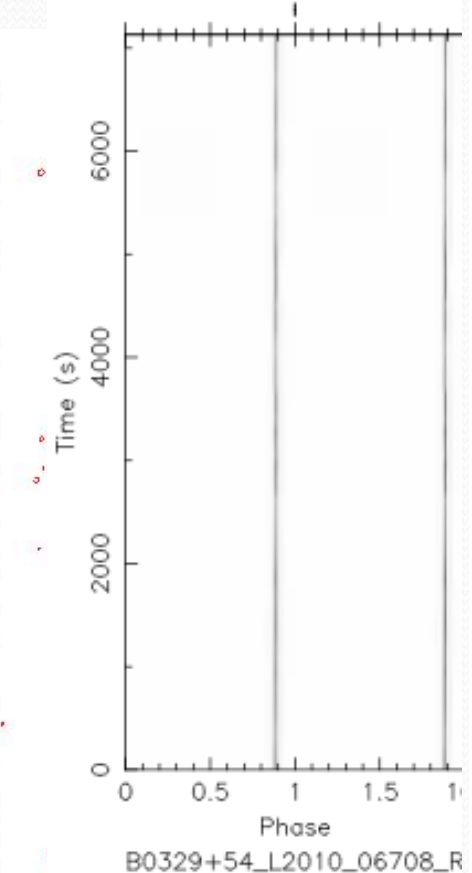
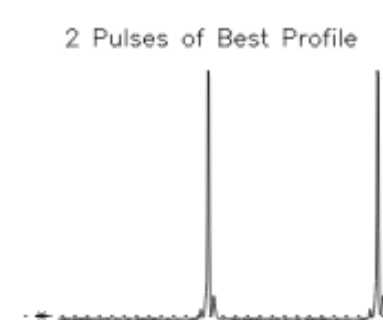
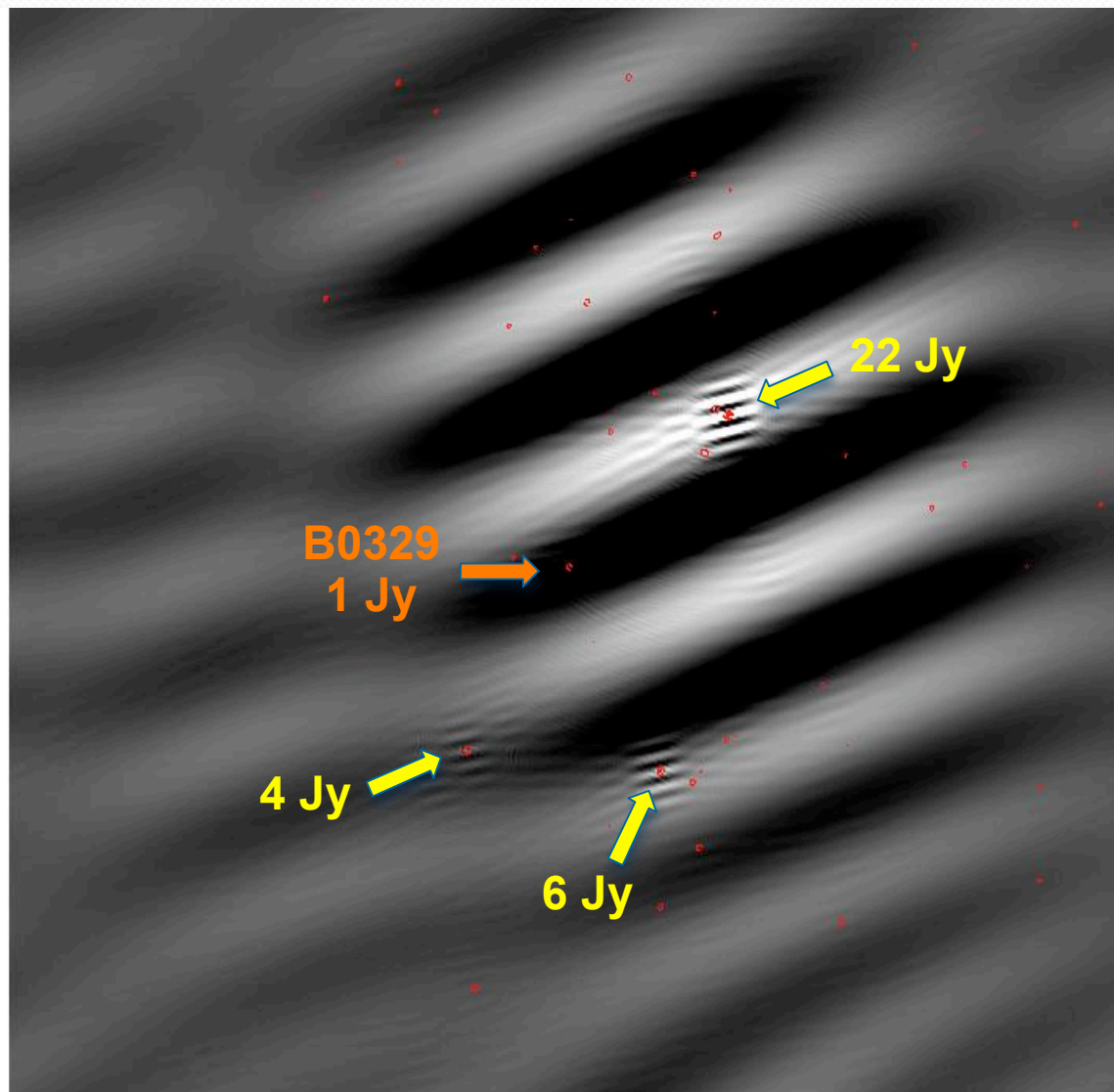
PSR B0329+54
1Jy



Full 5x5deg FoV with WENSS contours
Different imaging regime... no bright source

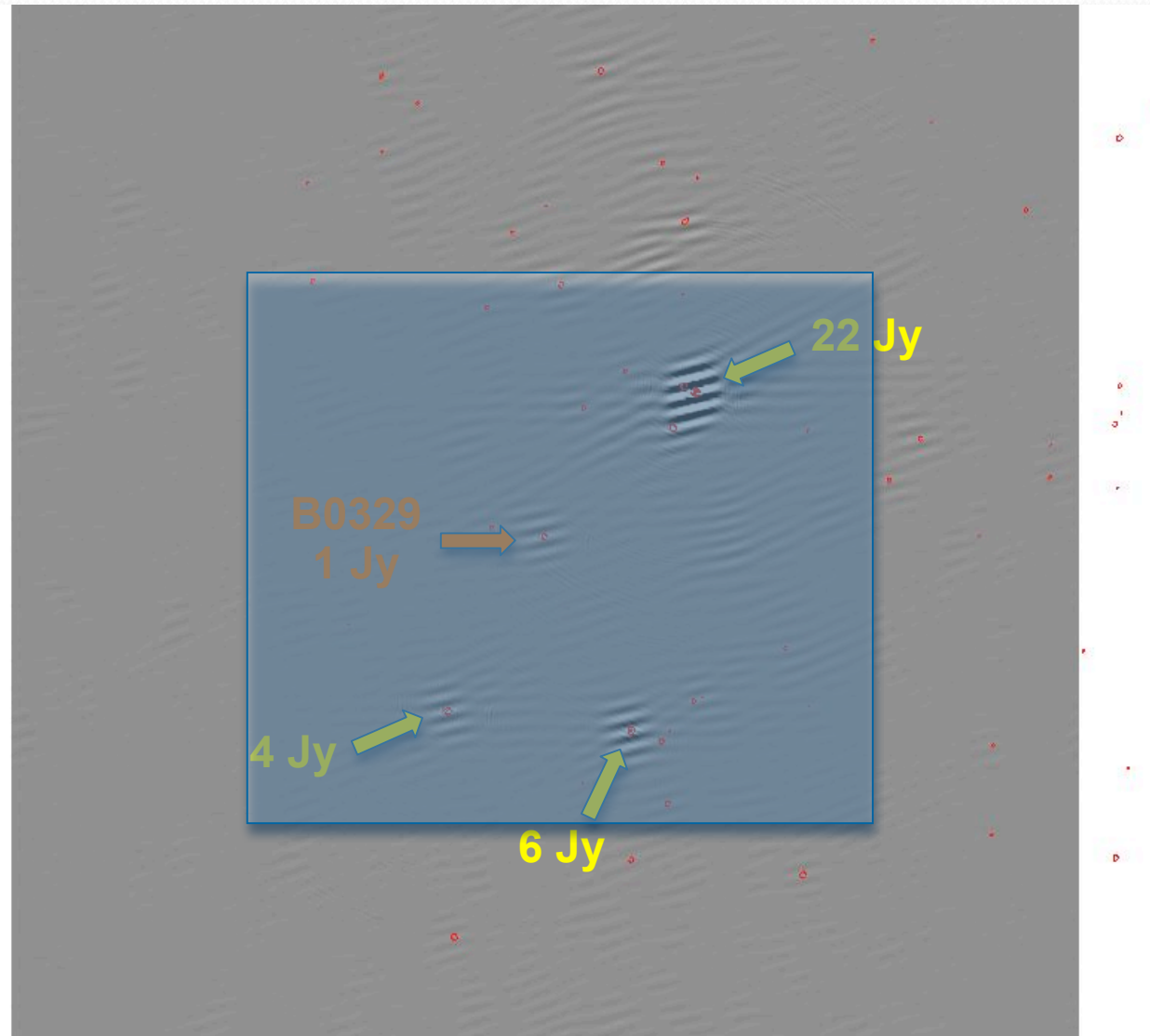
2-hr

- Simultaneous imaging and pulsar (incoherent sum) data
- HBA 130-178MHz
- 2 core + 4 remote Stations
- 3 BBS Calibration Sources
- 248 subbands
- Includes short baselines



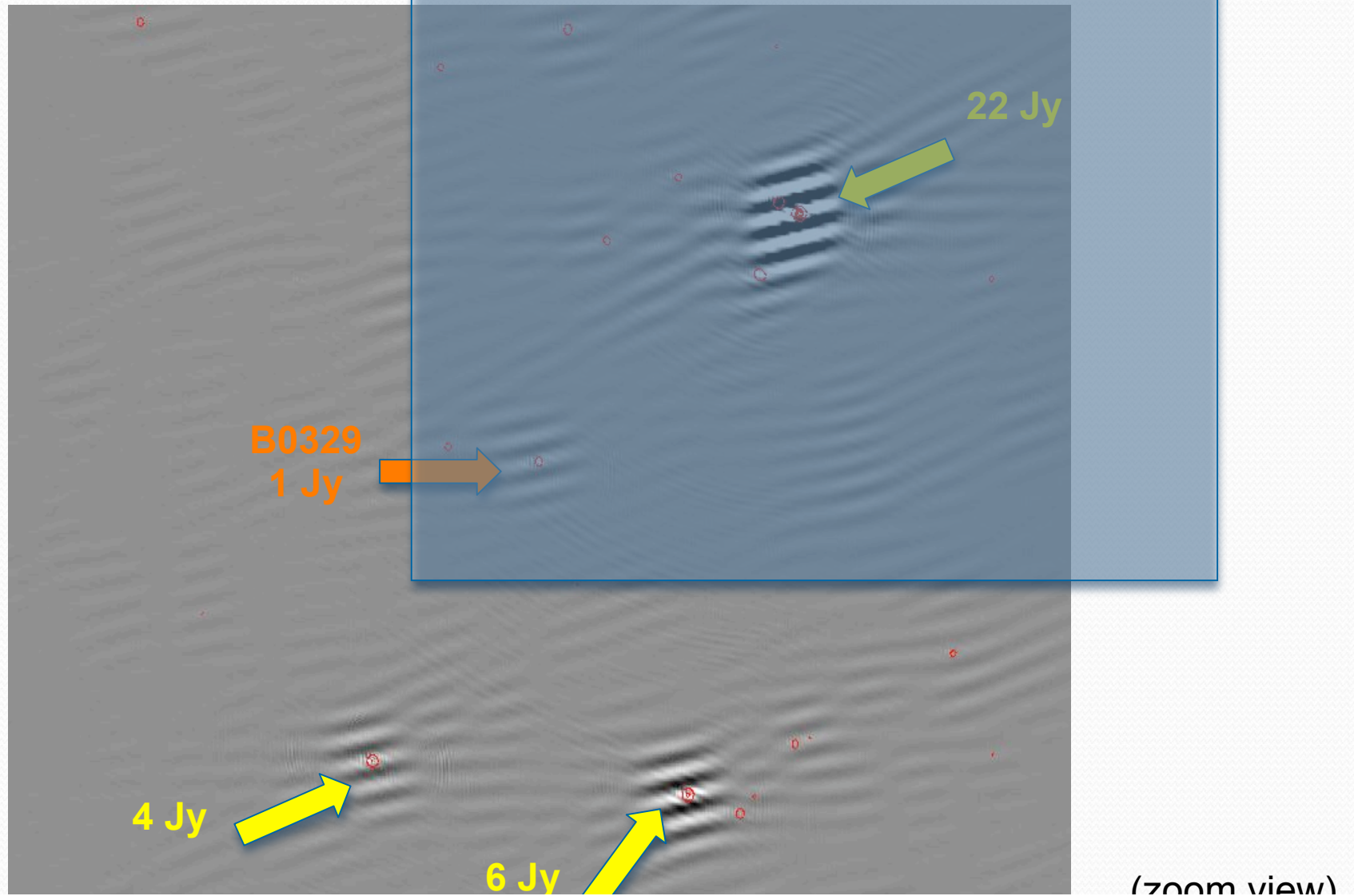
2-hr

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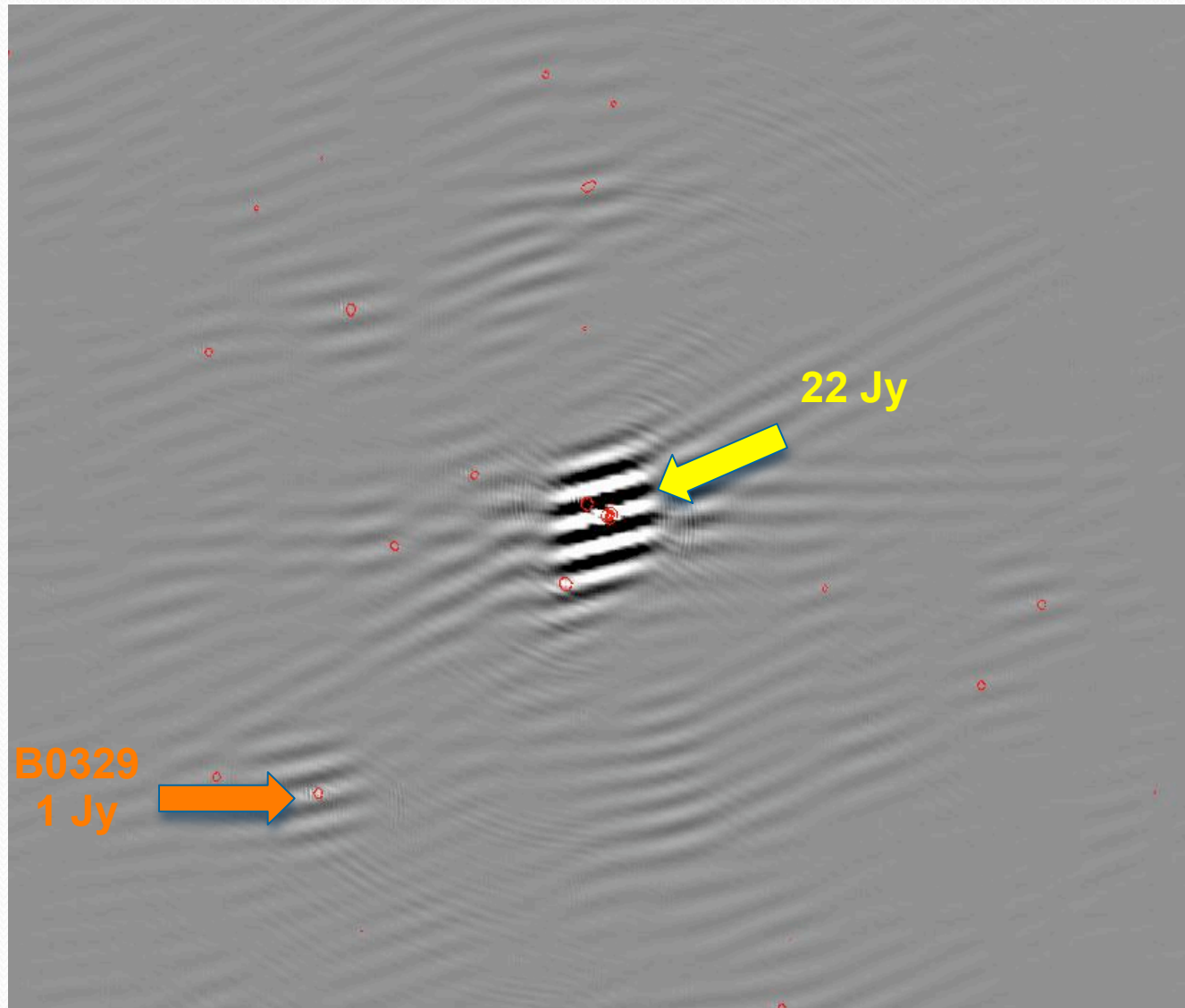
2-hr

- Pulsar “detected” in data!
- Re-center next observation on bright source



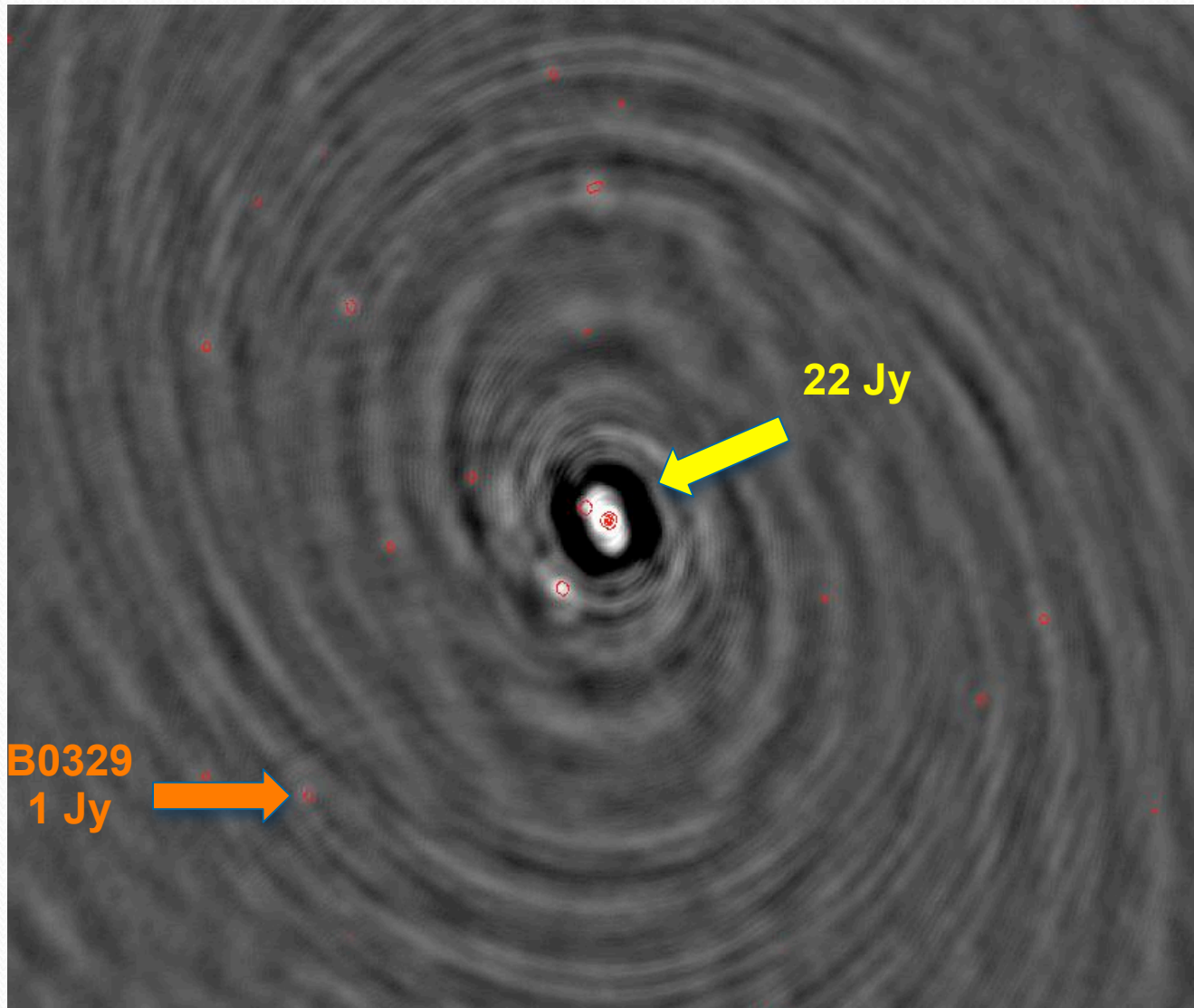
2-hr

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12-hr

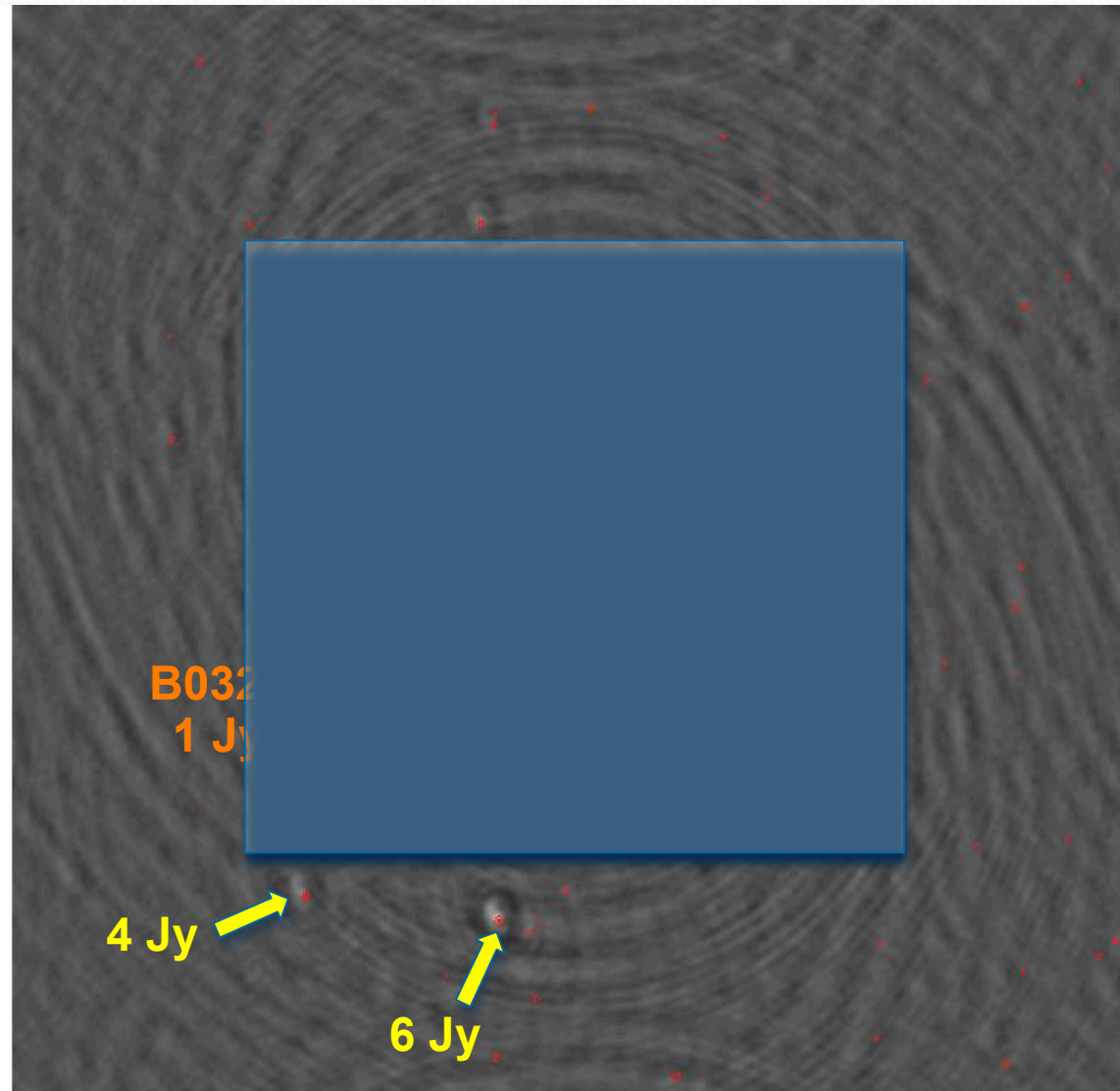
- 12 hr simultaneous pulsar and imaging data (L2010_06928)
- 7 core and 3 remote stations
- **Excludes** short baselines
- 3 BBS calibration sources (brightest at phase center)
- 1 subband:



(zoom view)

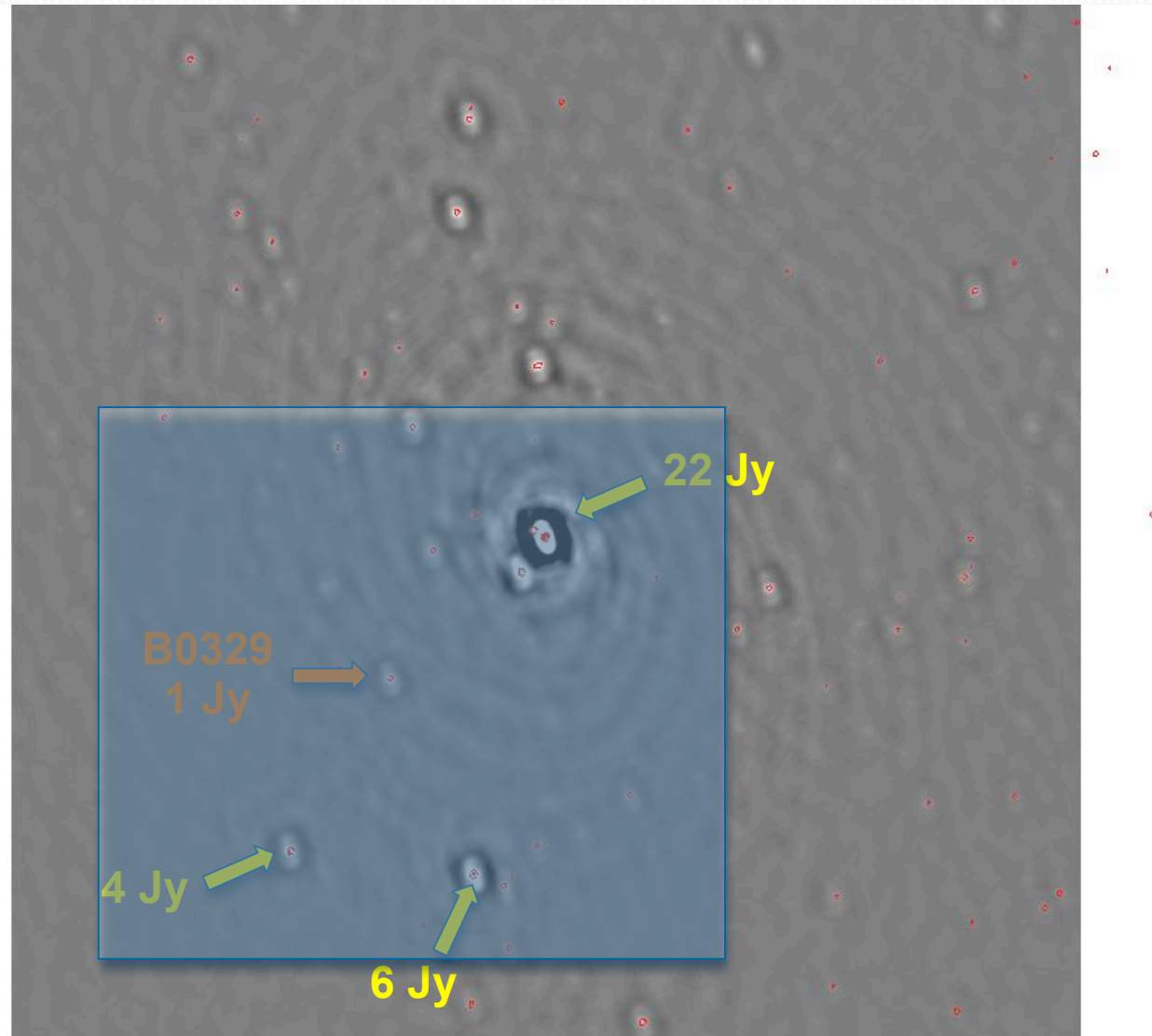
12-hr

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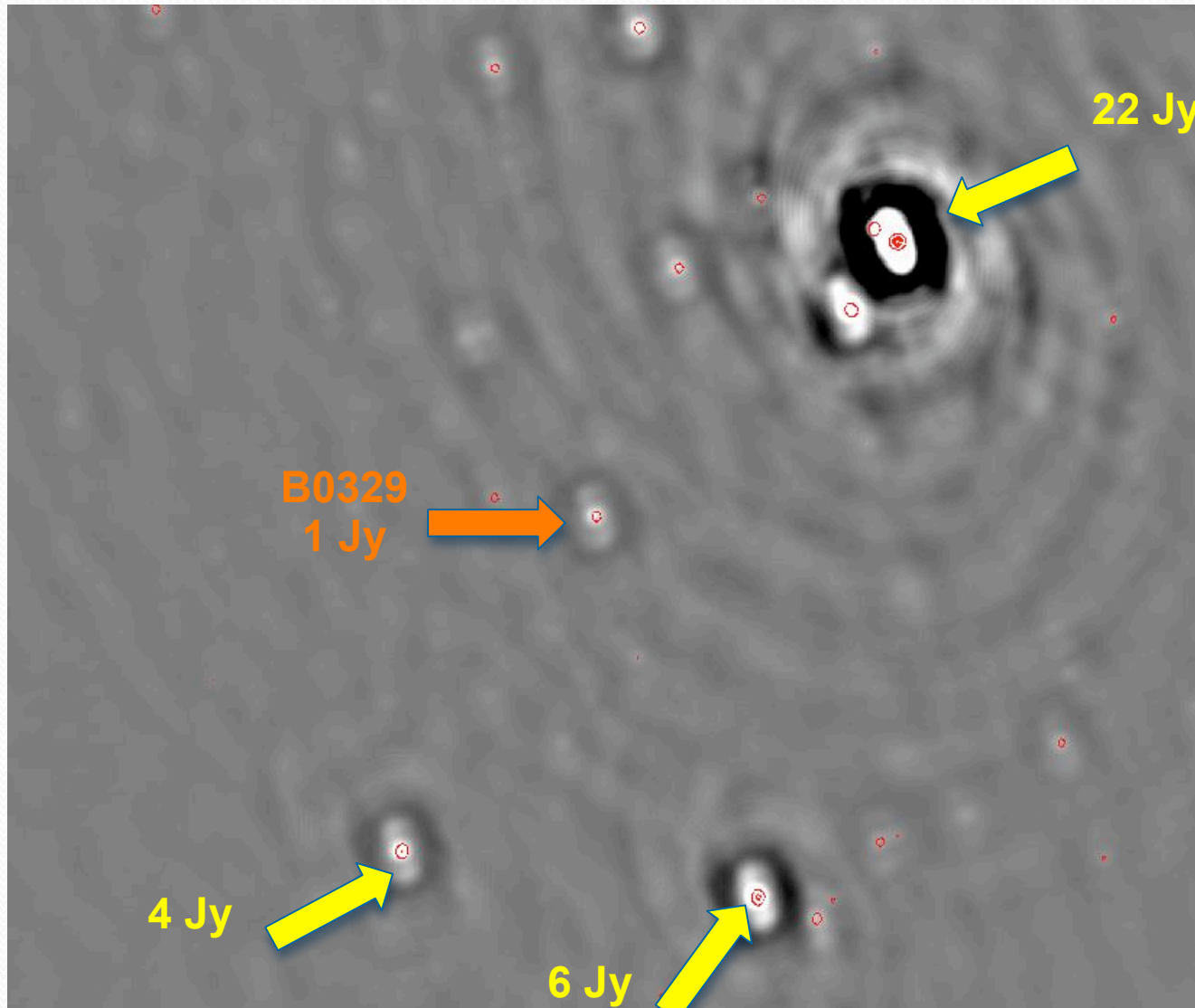
12-hr

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12-hr

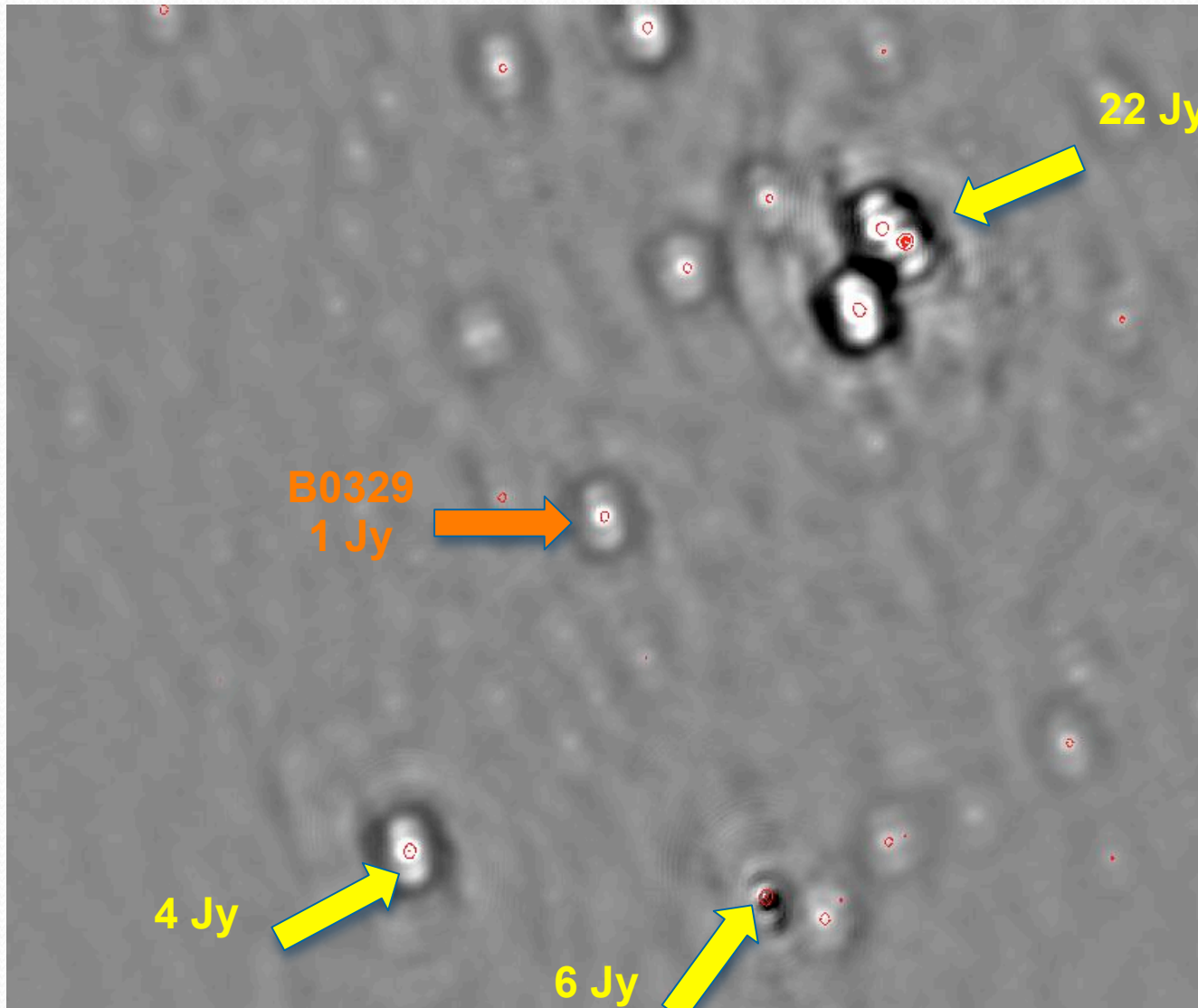
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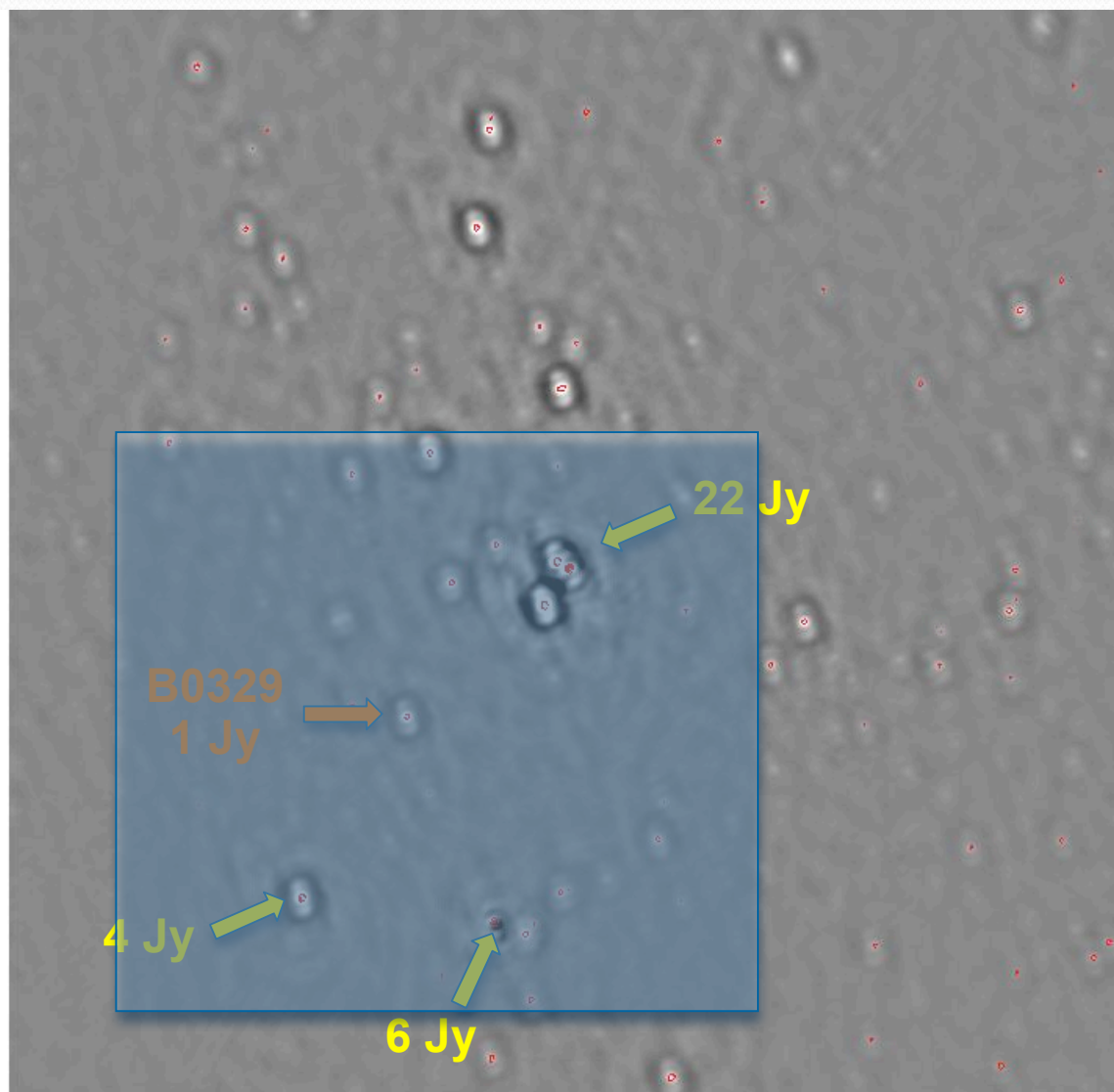
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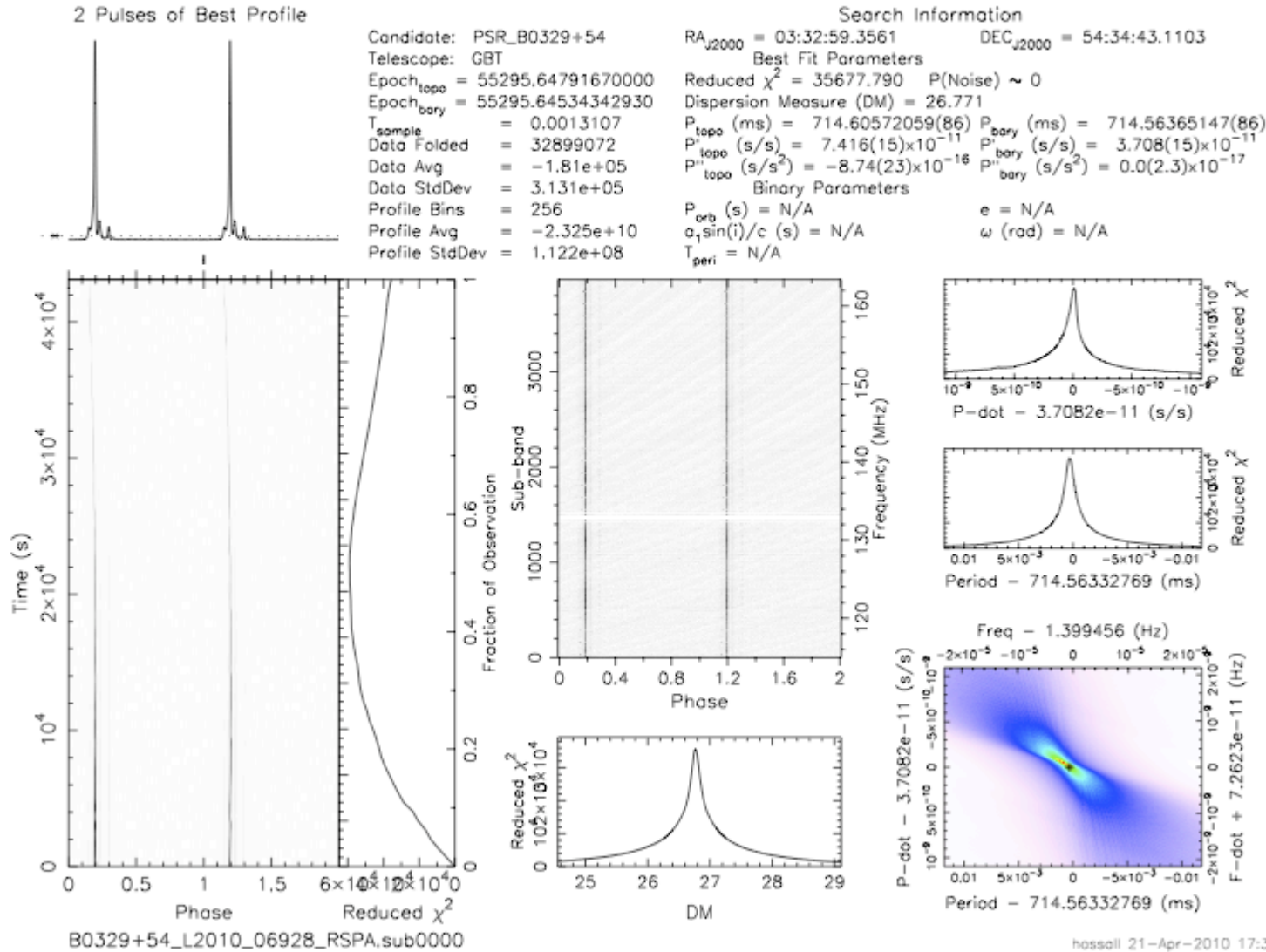
(zoom view)

12-hr

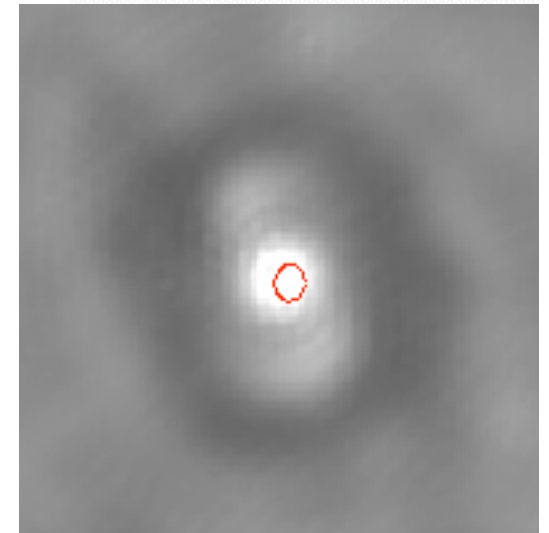
- Success with **simultaneous imaging + incoherent BF** station sum!
- Proof-of-concept of **piggy-backing during MSSS** and beyond
- **Parameter file settings** took iterations to work out; can be re-used
- **Bugs fixed** in the Imaging Pipeline and tools



Simultaneous coherent sum BF data (shown last week)



Pulsar Image



12-hr