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JBCA mICon

About JBCA

Areas of research

- Time domain: pulsars, exoplanets, transients
- Cosmology: CMB, dark matter, gravitational lensing
- SSG: solar physics, Galactic astrophysics, galaxies and clusters

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Classifying Astrophysical Sources Using Machine Learning

Is it a Star?

Is it a Galaxy?

Is it a Quasar?

See Alex Clarke's talk later using Random Forests


Credit: SKA Australia
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SKA GROUP @
MANCHESTER

Credit: Michael Wise and Aenaes

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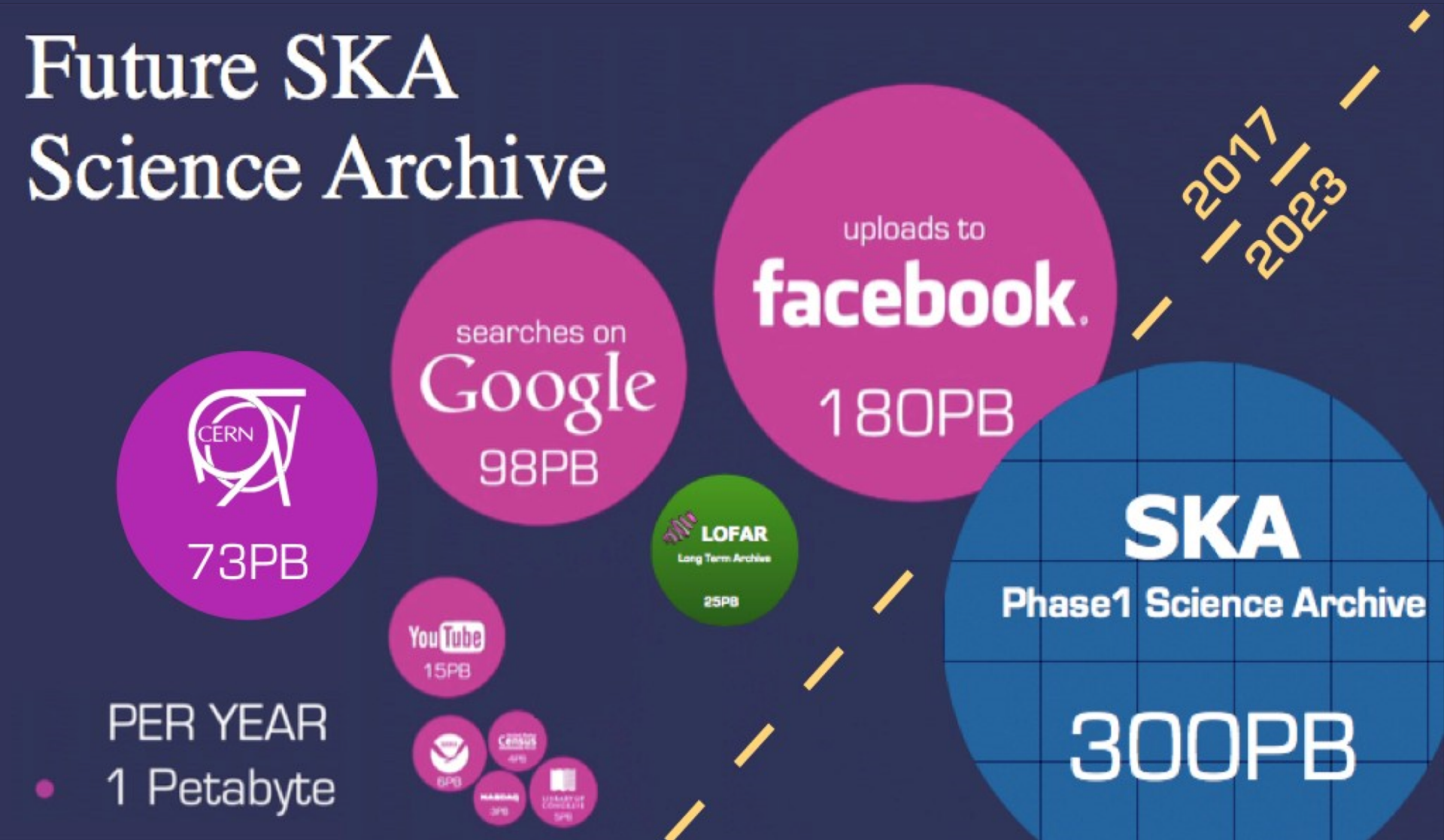
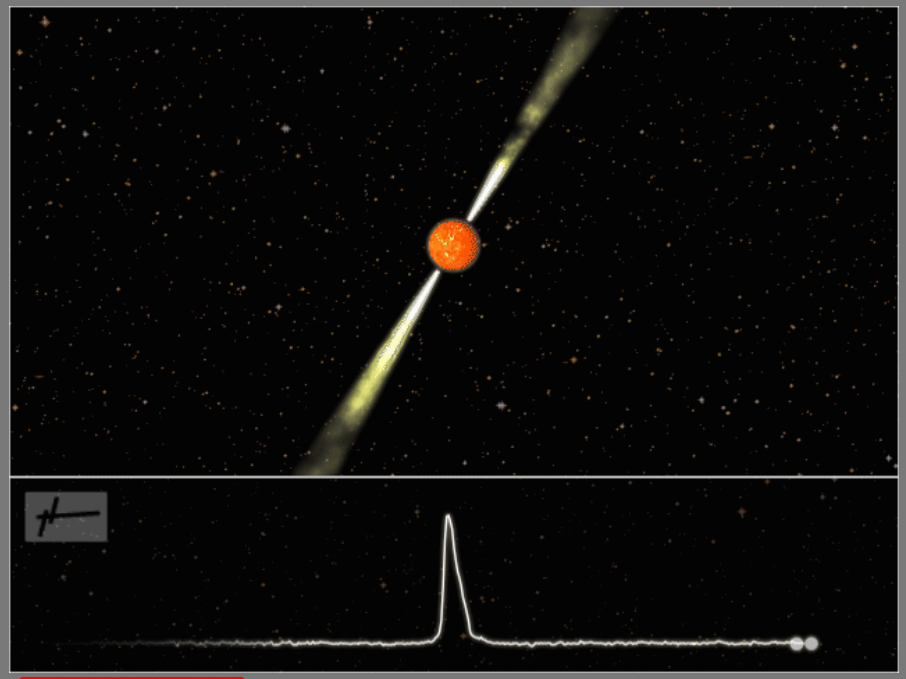
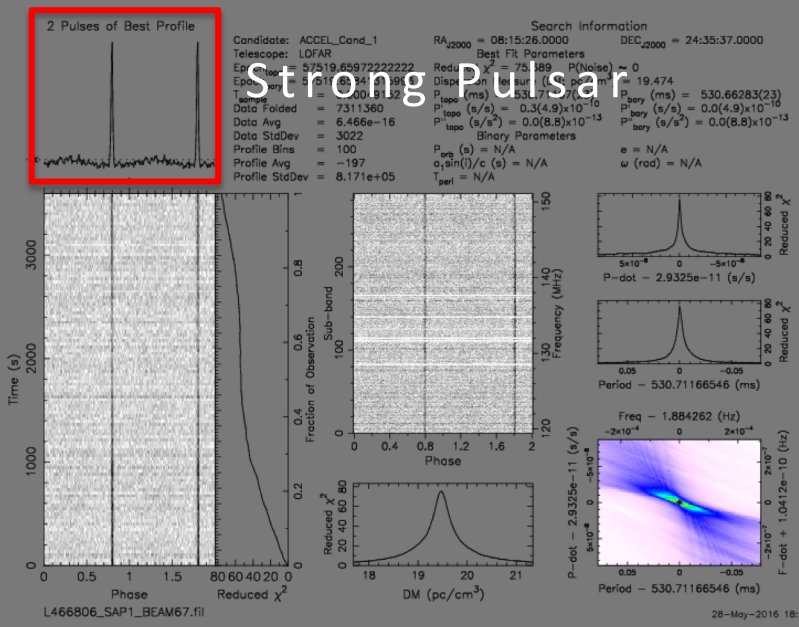
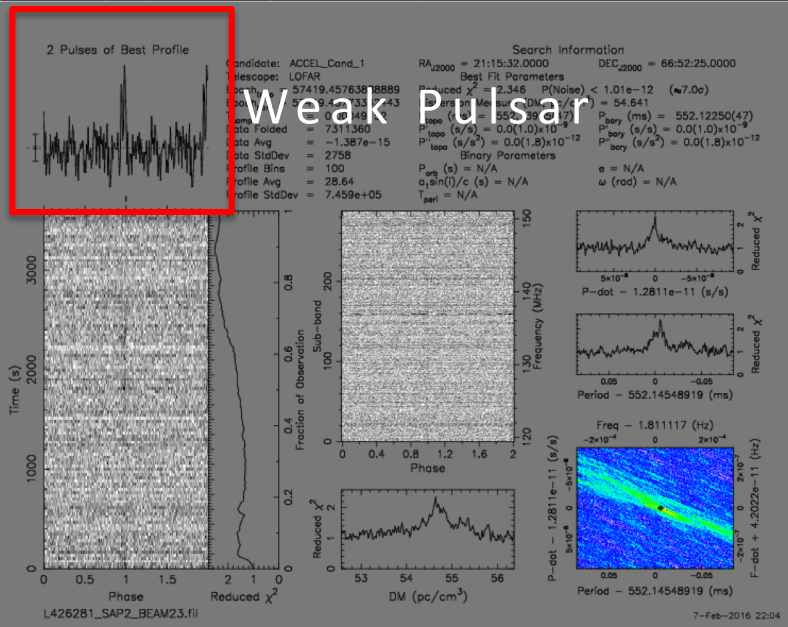
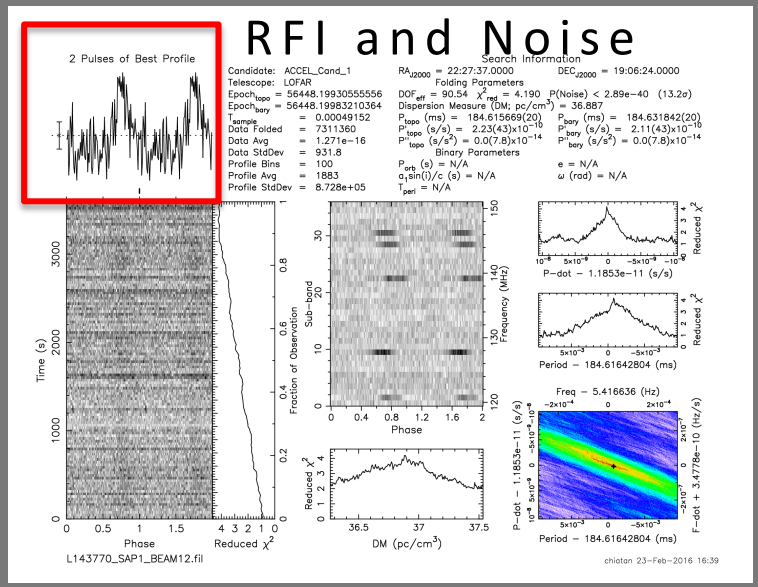


Example: Pulsars









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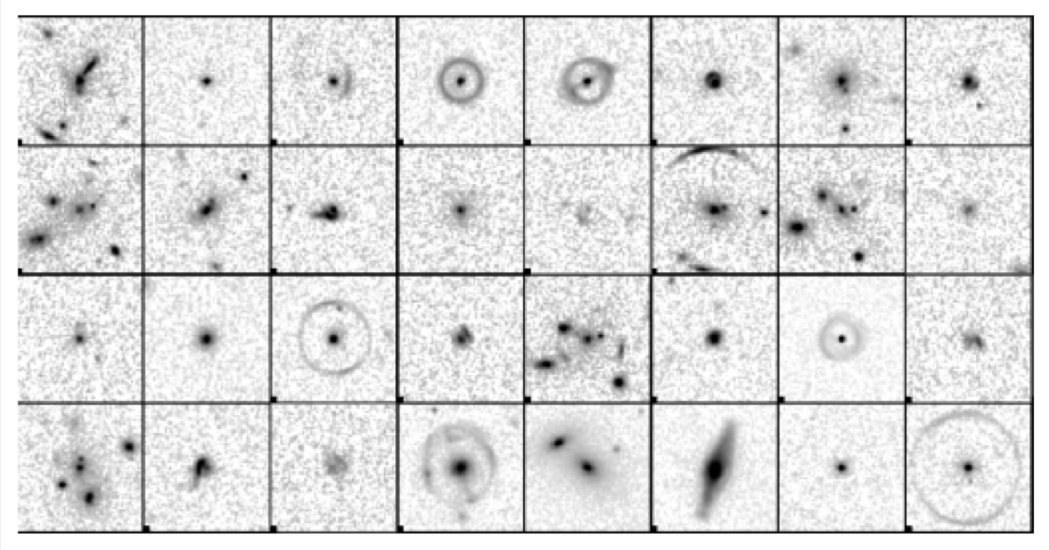
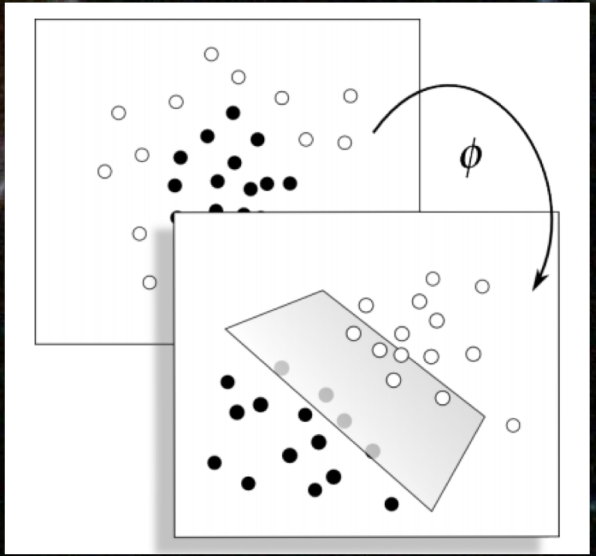
Example: Gravitational lensing

- Support Vector Machine classification
- Rejection of false positives





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JBCA Machine Learning Club

- Run monthly machine learning lunches
- Hacknights for hands-on experience in a wide variety of topics and disciplines
- Funded by Invest in Success grant

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- Replace "AI", "Neural Network", and other buzz terms with “predictive model:" It removes a false sense of agency, better reflects reality, and instantly brings the hype factor down by 300%. – Jesse Engel
- On the other hand…

Large grant in machine learning	Large grant in statistics
£1,000,000	£50,000