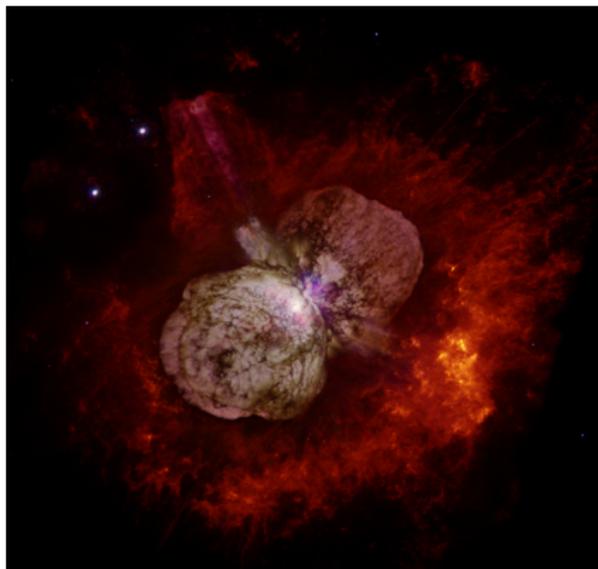


A campanha de observações de η Carinae em 2014

F. Jablonski

8 de Abril de 2015

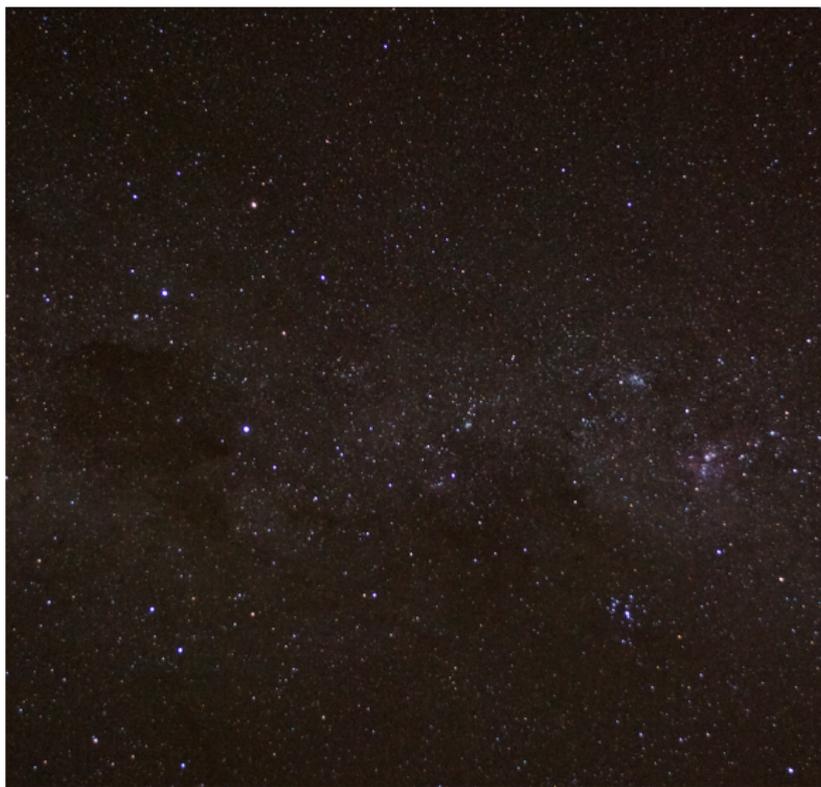
Porque η Car é importante?



- Explosão em 1843, similar em muitos aspectos à de uma SN
- Sistema binário¹, com estrelas de alta massa ($90M_{\odot} + 30M_{\odot}$). O período orbital é de 2023 ± 4 dias, com $e \sim 0.9$
- Ambiente complexo, com colisão de ventos
- 186 papers nos últimos 10 anos

¹Damineli et al., ApJ 528, 101 (2000)

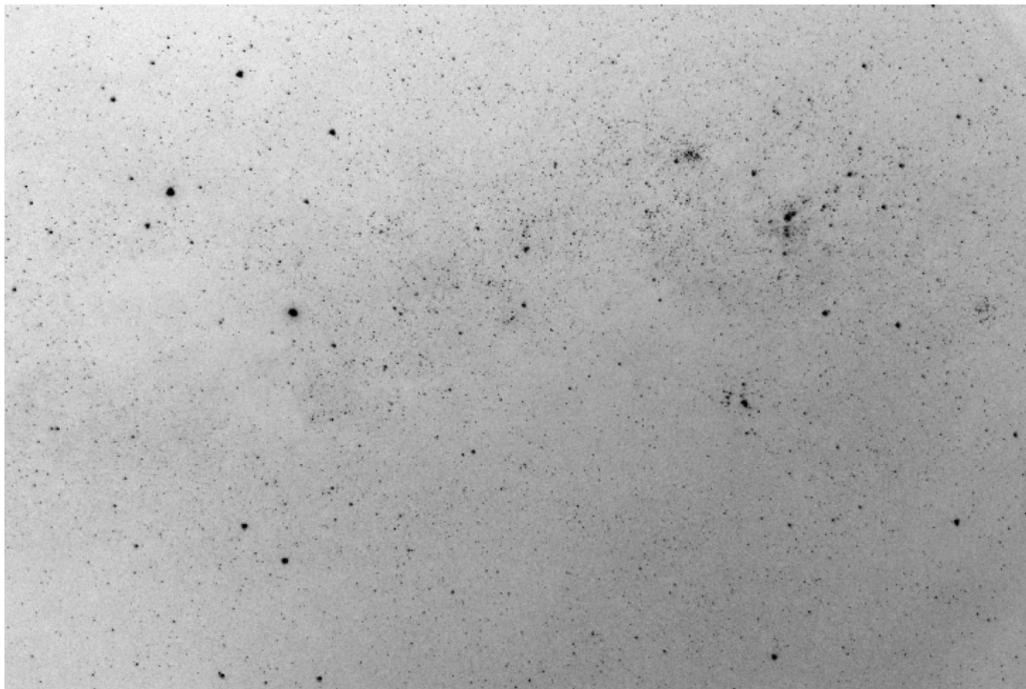
Como achar no céu



Nikon D3100, exptime=30 s, ISO 3200, OPD/LNA, 24/04/2014.



Como achar no céu



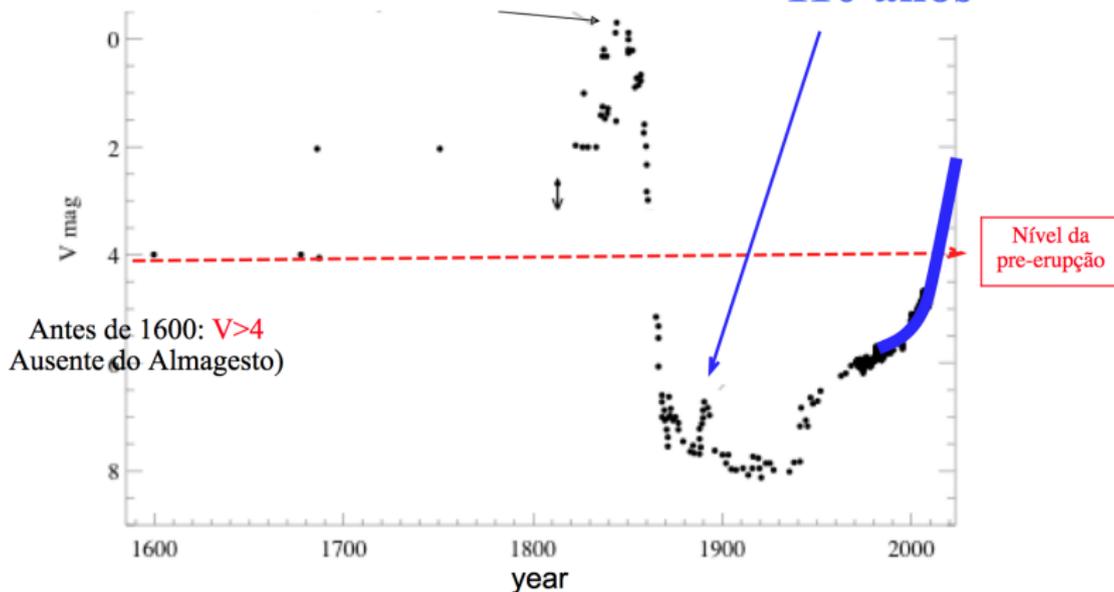
Nikon D3100, f=50mm @ f/1.8, exptime=9 x 8 s, ISO 3200, SJCampos, 10/03/2015.

A curva de luz histórica

<=nebulosa externa Homúnculo
~2 000 anos

171 anos

Pequeno Homúnculo
110 anos



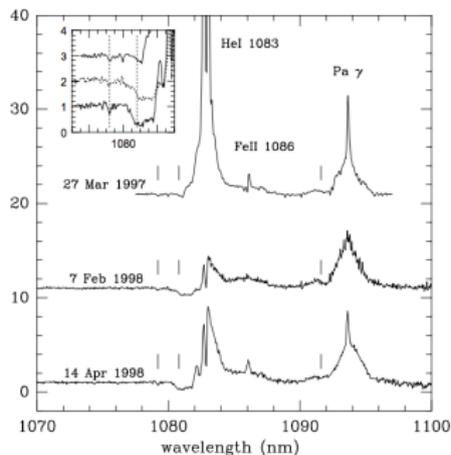
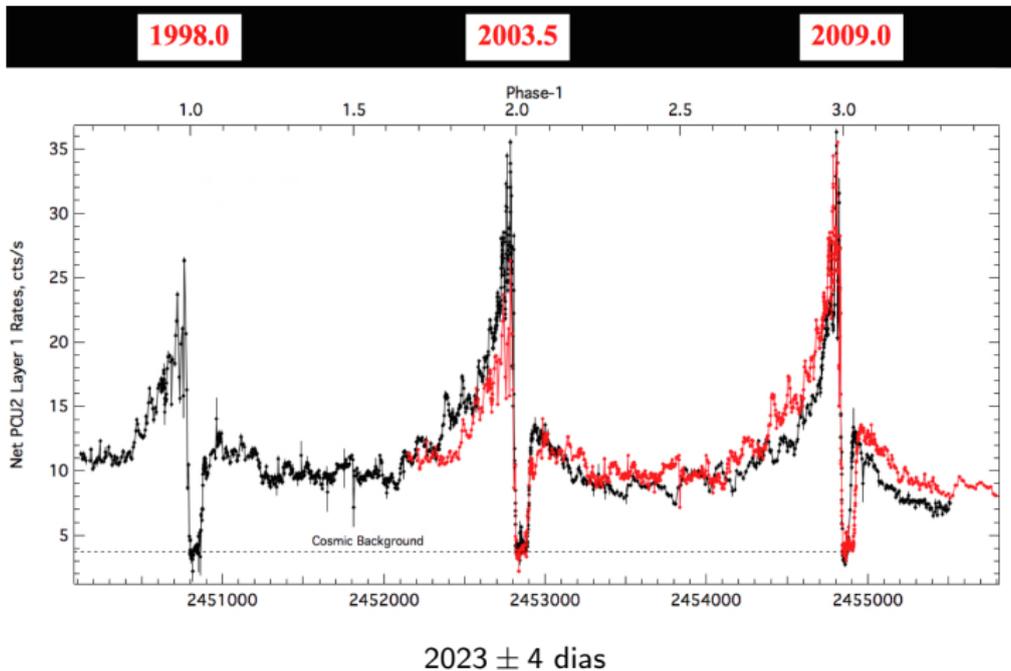


Fig. 6. The NIR spectrum of η Car during high and low states (LNA Observatory). Vertical bars mark the He I P Cygni absorption components at -600 and -1050 km s^{-1} , and the -600 km s^{-1} components of P γ . Ordinates are fluxes normalized to continuum. Successive spectra are offset by 10 continuum units. The P Cygni absorptions of He I are shown enlarged in the inset.

Damineli 1996, ApJ 460, 49

Viotti et al., A&A 385, 874 (2002)

O período orbital



A campanha observacional de 2014

A coordenação foi de Augusto Damineli (IAG-USP)

OPD+SOAR

Mairan Teodoro

A. Damineli

F. Jablonski

F. Navarete

Thiago de Andrade

R. Prates Campos

Messala

Coimbra

J. H. Groh

SOLO

New Zealand (MJUO)

Australia (Amateurs)

Brazil (OPD+Am)

Argentina (LA Plata+Casleo)

Chile (SOAR+CTIO)

ESPAÇO

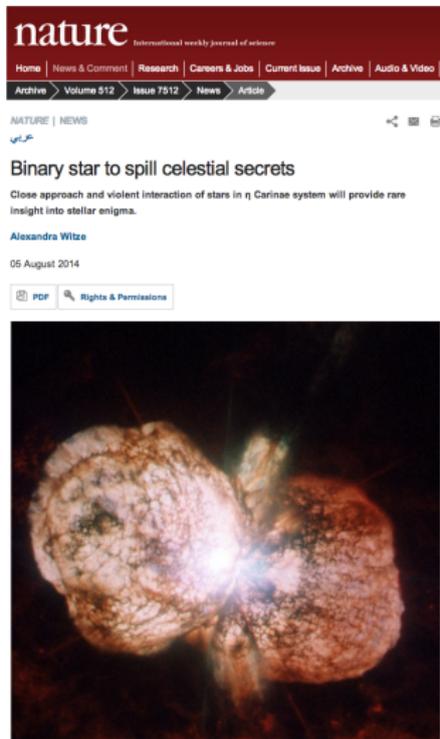
HST

Chandra

Swift

XMM

A campanha na Nature



The image is a screenshot of a news article from the journal Nature. At the top, the 'nature' logo is displayed in white on a dark red background, with the tagline 'International weekly journal of science' below it. A navigation bar contains links for 'Home', 'News & Comment', 'Research', 'Careers & Jobs', 'Current Issue', 'Archive', and 'Audio & Video'. Below this, a secondary navigation bar shows 'Archive', 'Volume 512', 'Issue 7512', 'News', and 'Article'. The article's title is 'Binary star to spill celestial secrets'. The sub-headline reads: 'Close approach and violent interaction of stars in η Carinae system will provide rare insight into stellar enigmas.' The author is 'Alexandra Witze' and the date is '05 August 2014'. There are buttons for 'PDF' and 'Rights & Permissions'. The main image shows two large, glowing, reddish-orange stars in a close, interacting configuration against a dark background.

nature
International weekly journal of science

Home | News & Comment | Research | Careers & Jobs | Current Issue | Archive | Audio & Video

Archive > Volume 512 > Issue 7512 > News > Article

NATURE | NEWS عربي 🔍 📧 📄

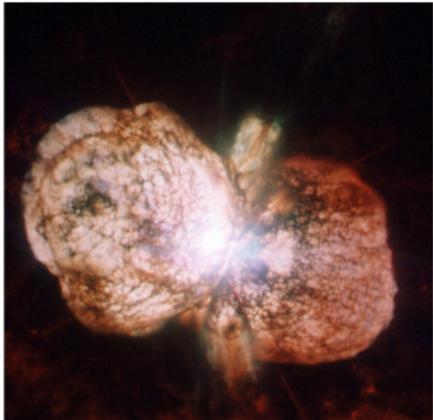
Binary star to spill celestial secrets

Close approach and violent interaction of stars in η Carinae system will provide rare insight into stellar enigmas.

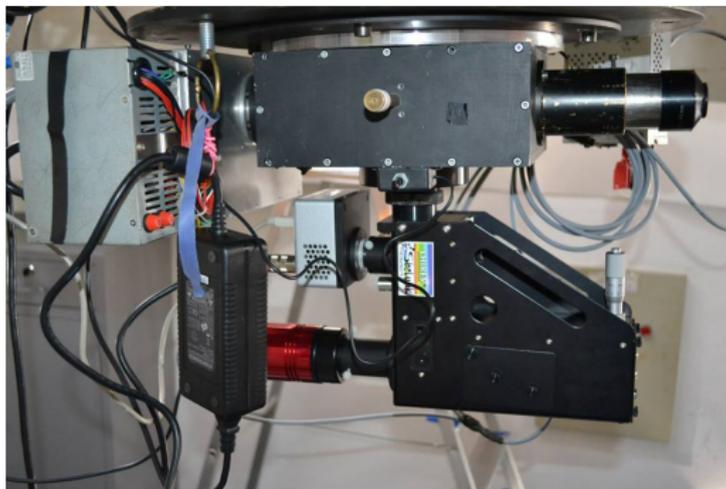
Alexandra Witze

05 August 2014

[PDF](#) [Rights & Permissions](#)

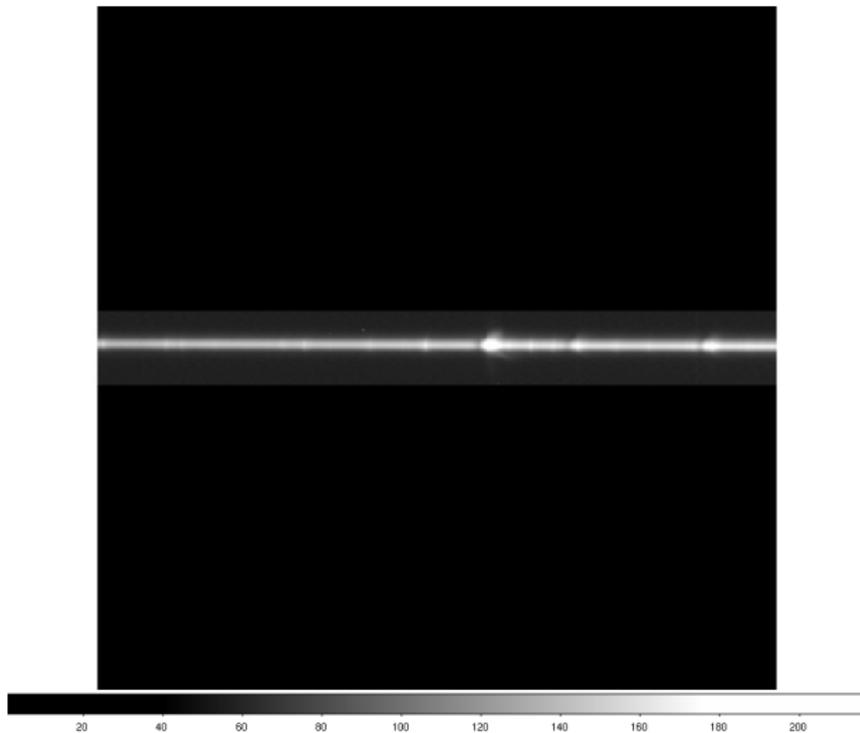


Telescópio Zeiss 60 cm + Lhires-III

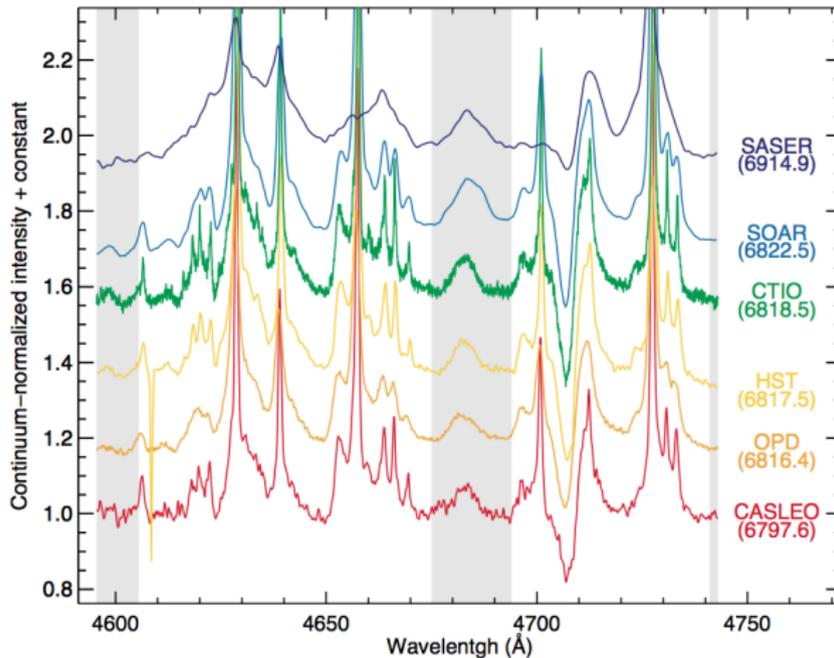


- $\frac{\Delta\lambda}{\lambda} \equiv R \sim 3000$
- Cobertura $\sim 2000 \text{ \AA}$ (no óptico)
- S/N típico 350 \leftarrow c1 *script p/* avaliação em tempo real
- CCD Sony ICX694
- Alguns espectros Coudé+160 cm @ $R \sim 10^4$, para verificação
- Observações em AH = 07:00 (G. Hickel)!

Exemplos de espectros



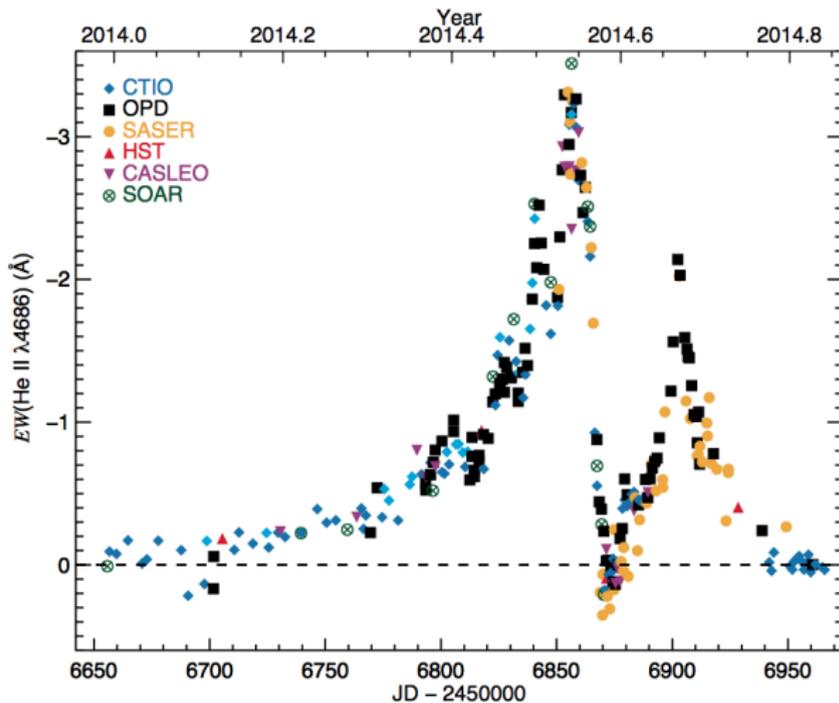
Exemplos de espectros



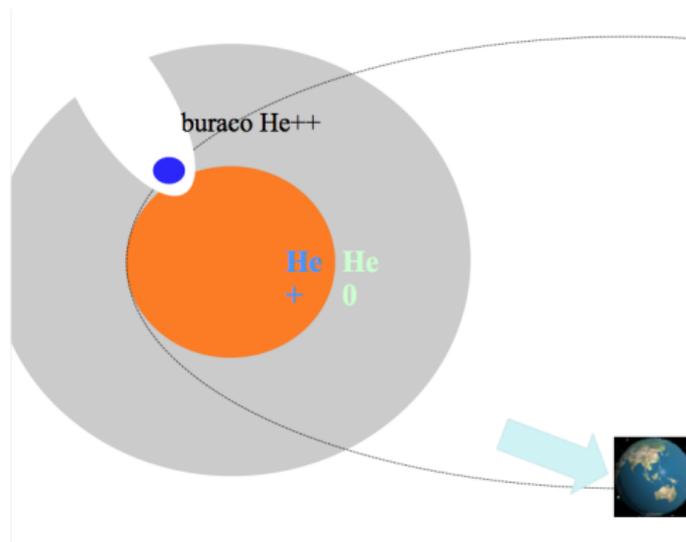
A campanha se focalizou no acompanhamento da linha do HeII $\lambda 4686 \text{ \AA}$

→ Daminieli & Steiner 2004, ApJ 612, 133.

A evolução do HeII $\lambda 4686 \text{ \AA}$



O modelo de colisão de ventos



Teodoro et al. 2015 (modelagem do Hell e raios X)

γ rays!!! (Ohm et al. 2015, MNRAS 449, 132)

The stability of the He II $\lambda 4686$ line emission across periastron passages in η Carinae^{*†}

M. Teodoro^{1‡}, B. Heathcote², N. Richardson³, F. Walters⁴, R. Prates⁵,
E. Fernández-Lajús^{6,7}, A. Coimbra⁵, P. Luckas^{2,8}, G. Hicel⁹, F. Navarete¹⁰,
A. Damineli¹⁰, T. R. Gull¹, M. Locke^{2,11}, J. Powles², T. Bohlson², F. Jablonski¹²,
T. Andrade¹⁰, W. Henrique⁹, M. F. Corcoran^{13,14}, R. C. Gamen^{6,7},
J. H. Groh¹⁵, K. Hamaguchi^{13,16}, D. J. Hillier^{17,18}, T. Madura¹, A. Moffat³,
Karen R. Pollard¹⁹, G. Weigelt²⁰

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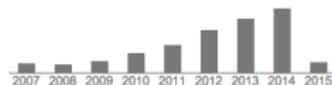
¹⁹Department of Physics and Astronomy, University of Canterbury, New Zealand

²⁰Maz-Planck-Institut für Radioastronomie, Auf dem Hügel 69, D-53121 Bonn, Germany

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