



Observing Application

Date: May 7, 2007
Proposal ID: VLA/07B-276
Legacy ID: AE163
PI: Daniel Evans
Type: Rapid Response
Exploratory Time
Category: Extragalactic
Total time: 1.0 hour

Examining Particle Acceleration In the Jet and Hotspot of DA 240

Abstract:

Our new XMM-Newton observations of the nearby FR II radio galaxy DA 240 have revealed a 100-kpc X-ray jet that terminates in a bright hotspot, which itself shows multiple sites of emission. However, existing radio observations (low frequency WSRT data and VLA L-band D-configuration data) are of insufficient angular resolution to allow us to determine the substructure of the radio hotspot. We propose an exploratory 6-cm VLA D-configuration observation of DA240 in order to map the structures of the jet and Northern hotspot in the source, and elucidate the particle acceleration processes present. Our short proposed VLA observation will allow us to construct spectral energy distributions in spatially distinct regions of the jet and hotspot, and will show whether further VLA observations are necessary.

Authors:

Name	Institution	Email	Status
Daniel Evans	Harvard College Observatory	devans@cfa.harvard.edu	
Martin Hardcastle	Hertfordshire, University of	m.j.hardcastle@herts.ac.uk	
Judith Croston	Hertfordshire, University of	J.H.Croston@herts.ac.uk	

Principal Investigator: Daniel Evans

Contact author: Daniel Evans

Telephone: 617-496-1801

Email: devans@cfa.harvard.edu

Joint:

Not a Joint Proposal

Observing type(s):

Continuum, *

Resources:

Resource name	Tele. Conf.	Frontend & Backend	Set up
VLA D 6cm	VLA D	C Band 6 cm 4500 - 5000 MHz VLA Correlator - Single Channel Continuum	Bandwidth: 50 MHz Rest frequencies: 4885.1,4835.1 MHz

Sources:

Source name	RA / RA Range	DEC / DEC Range	System	Velocity/z	Group name
DA 240 N	07:49:47.9 00:00:00.0	+55:54:13.0 00:00:00	J2000	z = 0.0357	

Sessions:

Session Name	Session Time	Repeat	Separation	LST Minimum	LST Maximum	Elevation Minimum
da240	1.0 hour	1	0 day	04:00:00	12:00:00	0

Session Constraints:

Session Name	Constraint	Comments
da240		

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit
da240	DA 240 N/	VLA D 6cm	1.0 hour	0.025mJy/bm

Total Time per Configuration:

Configuration	Total Time
D	1.0

Present for observation: no Staff support: None