



Observing Application

Date : Feb, 25 2008
 Proposal ID : VLA/08A-235
 Legacy ID : AG793
 PI : David Green
 Type : Rapid Response -
 Exploratory Time
 Category : Galactic
 Total Time : 1.0

Expansion of the very young SNR G1.9+0.3

Abstract:

Recent Chandra observations of G1.9+0.3 -- which is the smallest cataloged 'shell' Galactic SNR, only about 1.2 arcmin in diameter -- have revealed this to be an unusual remnant: first, its X-ray emission is synchrotron dominated, making it one of only 4 such Galactic shell SNRs, all of which are young; second the X-ray emission is significantly larger than the radio shell in the best available radio image, from 1985. This is either due to considerable (about 17%) expansion in 22 years, or else indicates that G1.9+0.3 is unique in having X-ray emission significantly *outside* the X-ray emission. Here we propose to obtain an up-to-date image of G1.9+0.3 in C-band, C-array (to match the resolution of archivable L-band, B-array observations), and also a current L-band flux density. This will allow the expansion of the remnant to be measured, to confirm whether or not the difference in X-ray and older radio images is indeed due to fast expansion, or not. These short observations will also allow planning for more detailed observations to be submitted at future standard deadlines.

Authors:

Name	Institution	Email	Status
David Green	Cambridge, University of	dag@mrao.cam.ac.uk	
Stephen Reynolds	North Carolina State University	steve_reynolds@ncsu.edu	
Borkowski Kazimierz	North Carolina State University	kborkow@ncsu.edu	
Una Hwang	NASA/GSFC & JHU	hwang@orfeo.gsfc.nasa.gov	
Ilana Harrus	NASA/GSFC & JHU	ilana.m.harrus@nasa.gov	
Robert Petre	NASA/GSFC & JHU	robert.petre-1@nasa.gov	

Principal Investigator: David Green
 Contact: David Green
 Telephone: +44 1223 337305
 Email: dag@mrao.cam.ac.uk

Related proposals:

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup
C-band	C	C Band 6 cm 4200-7700 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 4885.1,4835.1 MHz Bandwidth: 50 MHz
L-band	C	L Band 20 cm 1000 - 2000 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 1464.9,1385.1 MHz Bandwidth: 50 MHz

Sources:

Name	RA / RA Range	Dec / Dec Range	Epoch	Velocity / z	Group
G1.9+0.3	17:48:45.0 00:00:00.0	-27:10:00 00:00:00	J2000	Velocity : 0.00	SNR G1.9+0.3

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
Image	1.00	1	0 day	15:50:00	19:50:00	15

Session Constraints:

Name	Constraints	Comments

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit
Image	G1.9+0.3	L-band	0.33 hour	0.08 mJy/bm
Image	G1.9+0.3	C-band	0.67 hour	0.05 mJy/bm

Present for observation: no

Staff support: None

Plan of Dissertation: no