



# Observing Application

Date: Sep 3, 2006  
 Proposal ID: VLA/06D-106  
**Legacy ID: AG738**  
 PI: Miller Goss  
 Type: Regular  
 Category: Galactic  
 Total time: 15.0 hour

## A New Search for Higher Velocity HI Cloudlets in Orion A: Repeat 1984 Run

### Abstract:

Abstract: In 1984, an early VLA HI absorption observation was carried out using the C array. The data are limited by a number of parameters of the incomplete line system. In addition to the major lines at 6, 4 and -2 km/s (with taus of 0.5 to 3) which cover a major part of the 5 arc min source, five minor HI velocity components were discovered at higher velocities; the velocities range from -7 to -17 km/s with one feature at a redshifted 9 km/s. The weak lines (tau 0.1 to 0.2) have linear sizes in the range 0.02 to 0.06 pc. The suggestion was made that these lines arise from rocket acceleration due to anisotropic ionization. A more likely explanation is that the HI cloudlets are in fact jet driven shocked material in the foreground matter- the Veil. We propose a new exploratory observation with increased sensitivity (uv coverage) and improved velocity coverage. We expect to detect a number of new higher velocity cloudlets.

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### Related proposals:

AR105

### Joint:

Not a Joint Proposal

### Observing type(s):

Spectroscopy, \* exploratory- dynamic scheduled

**Resources:**

Resource name	Tele. Conf.	Frontend & Backend	Set up
HI	VLA C	L Band 20 cm 1240 - 1700 MHz VLA Correlator - Spectral Line	IF mode: 2  Bandwidth: 0.78125 MHz  Number of channels: 256  Spectral resolution: 3.052 kHz  Rest frequencies: 1420.40575 MHz

**Sources:**

Source name	RA / RA Range	DEC / DEC Range	System	Velocity/z	Group name
Orion A	05:32:50.0 00:00:00.0	-05:25:30 00:00:00	B1950	0 km/s	HI

**Sessions:**

Session Name	Session Time	Repeat	Separation	LST Minimum	LST Maximum	Elevation Minimum
Orion	5.0 hours	3	0 day	00:30:00	10:30:00	0

**Session Constraints:**

Session Name	Constraint	Comments
Orion		

**Session Source/Resource Pairs:**

Session Name	Source	Resource	Time	Figure of Merit
Orion	Orion A/HI	HI	5.0 hour	4mJy/bm

**Total Time per Configuration:**

Configuration	Total Time
C	15.0

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Present for observation: no Staff support: None