

COS-GTO: STIS high resolution observations of the local ISM

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Scientific Category: ISM AND CIRCUMSTELLAR MATTER

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CHEMICAL ABUNDANCES, GALACTIC STRUCTURE

Abstract

We shall use bright early-type B stars located within 150pc of the Sun to probe the absorption properties of the interstellar gas associated with the local cavity. By utilizing the high sensitivity and high spectral resolution of the HST-STIS spectrograph we shall be able to place new detection limits on absorption occurring in any highly ionized gas associated with the lines of NV, SiIV and CIV that may be present along these sight-lines within the local cavity. These data will be used to test current theoretical models that generally predict far higher absorption column densities than have been previously found. Also, the high spectral resolution will enable far stricter limits to be placed on the thermal widths of such highly ionized absorption lines, which previous observations towards the Loop I region have suggested anomalously narrow profiles consistent with their formation by either photo ionization or highly non-equilibrium processes.

Investigators:

	Investigator	Institution	Country
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Number of investigators: 2

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Target Summary:

Target	RA	Dec	Magnitude
HD120315	13 47 32.4377	+49 18 47.75	V = 1.852 +/- 0.01, F(1300) = 5.50E-09
HD175191	18 55 15.9260	-26 17 48.20	V = 2.058 +/- 0.01, F(1500) = 4.50E-09
HD158427	17 31 50.5000	-49 52 34.12	V = 2.836 +/- 0.01, F(1300) = 5.00E-09
HD32630	05 06 30.8928	+41 14 4.11	V = 3.158 +/- 0.1, F(1300) = 4.00E-9

Observing Summary:

Target	Config Mode and Spectral Elements	Flags	Orbits
HD120315	STIS/FUV-MAMA Spectroscopic E140H (1343)		1
	STIS/FUV-MAMA Spectroscopic E140H (1598)		
HD175191	STIS/FUV-MAMA Spectroscopic E140H (1343)		1
	STIS/FUV-MAMA Spectroscopic E140H (1598)		
HD158427	STIS/FUV-MAMA Spectroscopic E140H (1343)		1
	STIS/FUV-MAMA Spectroscopic E140H (1598)		
HD32630	STIS/FUV-MAMA Spectroscopic E140H (1343)		1

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Target	Config Mode and Spectral Elements	Flags	Orbits
	STIS/FUV-MAMA Spectroscopic E140H (1598)		

Total prime orbits: 4

This is a COS GTO project, no scientific justification is needed.