Summary of Cycle 23 Program- COS Pure Parallel Observations of Geocoronal Lyα

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ABSTRACT

In this report we summarize the Cycle 23 program that obtained geocoronal Lyα observations with the FUV detector of the Cosmic Origin Spectrograph (COS).

Contents

1. Introduction

This program is designed to acquire geocoronal Lyα (airglow) observations for some of the most used COS FUV observing modes as a pure parallel program with the Space Telescope Imaging Spectrograph (STIS). The purpose of this program is to provide COS users with airglow data for use in customized calibrations and modeling of airglow features. All observations were successful (see Table 1 summary).

Table 1. Cycle 23 Airglow Observations.

Program ID	Rootname	Cenwave
14429	LD1CE1060	1327
14429	LD1CE2060	1327
14429	LD1CE3060	1291
14429	LD1CE4060	1291

Note. — All exposures were taken with an exposure time of 2900s and at FP-POS=3.

2. Summary

The Cycle 23 airglow observations were taken as pure parallel observations with the STIS program 14429. Program 14429 contains two airglow observations with the G130M/1327 setting (see Figure 1 for an example) and two with the G130M/1291 setting (Figure 2).

The data were successfully acquired, have been archived, and are available for download. For convenience to users, we have listed links to the data on the COS Airglow website:

`http://www.stsci.edu/hst/cos/calibration/airglow.html.`

Change History for COS ISR 2017-15

Version 1: August 18, 2017 - Original Document
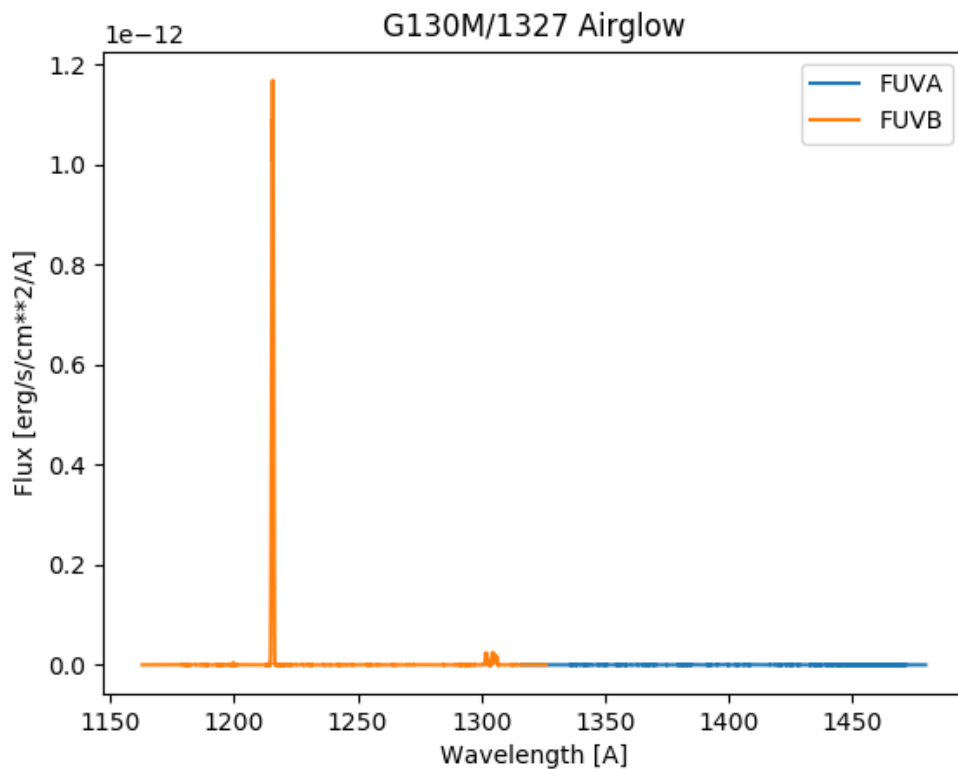Version 2: December 5, 2017 - Moved results from the Cycle 24 program to ISR 2017-23

Figure 1. G130M/1327 example, LD1CE1060, with segments highlighted. Lyα airglow is seen at 1215.6702 Å, Nitrogen at $\approx$1200 Å, and Oxygen airglow is seen at 1302.1685 Å (O I), 1304.8576 Å (O I*) and 1306.0286 Å (O I**).
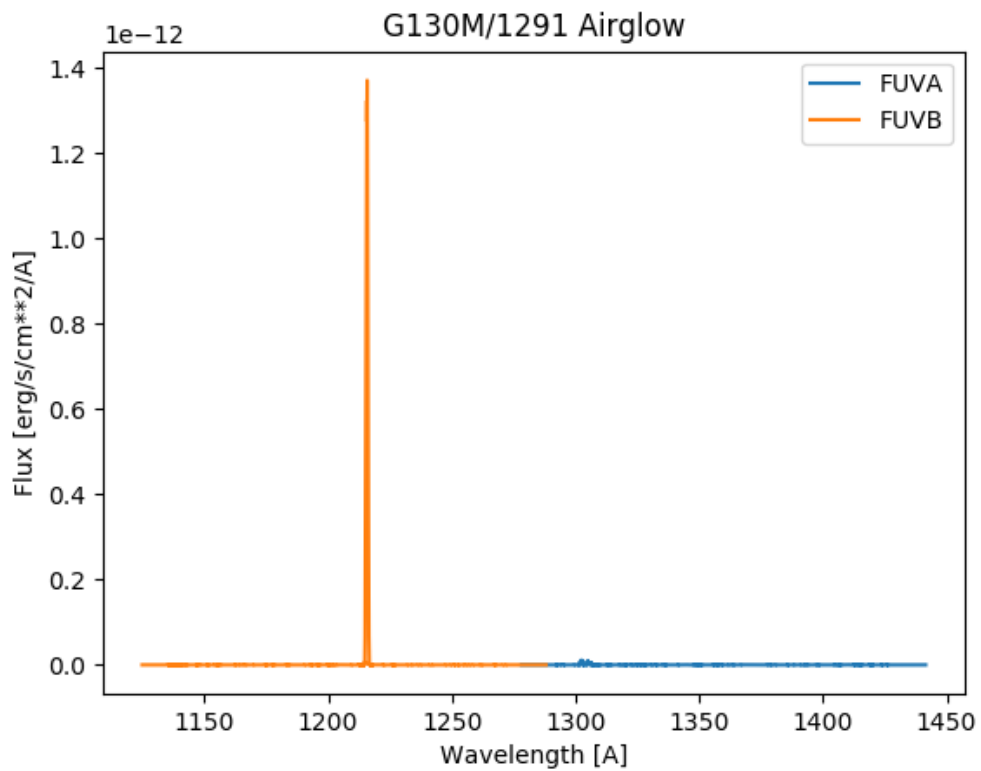
Figure 2. G130M/1291 example, LD1CE3060, with segments highlighted. Lyα airglow is seen at 1215.6702 Å and Oxygen airglow at 1302.1685 Å (O I), 1304.8576 Å (O I*), and 1306.0286 Å (O I**).