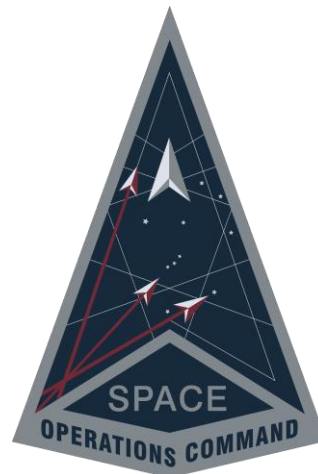


**HQ Space Operations  
Command (SpOC)  
DCG-T/S9I  
Astrodynamics  
Standards  
Engineering  
Group**



# **Astrodynamics Standards**



## **Release Notes**

**Version 9.1.1**

**June 2023**

# 1. Background

Version 9.1 (v9.1) is a minor release of the U.S. Space Force, Space Operations Command, Astrodynamics Standards software library. The Astro Standards are delivered as a collection of shared libraries (DLL/so/dylibs for Windows, Linux, and Mac respectively). The libraries can be run on 64-bit, x86/x64 platforms, and version releases include wrappers and drivers to support a variety of customer/user preferred languages. Starting with v9.0, MacOS is supported for the M1 architecture. Within this document, the term “Library” is used to refer to either a Windows DLL, Linux so, or a Mac dylib. The Library algorithms are designed to be compatible with systems and astrodynamics algorithms implemented into space operations and used by Warfighters and Analysts, including those of 18 Space Defense Squadron (18 SDS). The Astro Standards are also used to Verify and Validate (V&V) equivalent algorithms of these operational space- domain systems such as those that run at the 18 SDS at Vandenberg AFB, and other operational locations critical to the National defense.

# 2. Fixes

V9.1.1 is a patch release of v9.1. There were three issues that were fixed in this release.

1. The API documentation was missing in v9.1
2. A memory leak was introduced in the Sensor library in either v8.4 or v9.0. This is fixed now.
3. Astro Standards searched for SGP4\_Open\_License.txt file using the current directory then PATH/LD\_LIBRARY\_PATH. This was changed to use just the PATH/LD\_LIBRARY\_PATH. This broke Sgp4Prop for some users as some system administrators don't allow users to change environment variables. V9.1.1 was changed to search PATH/LD\_LIBRARY\_PATH and then current directory to aid these users (reverse of the original set up).

# 3. Contact Astro Standards

For reporting issues, contact the Astro Standards development team at:

spoc.dcg-t.s9iaastrostds@us.af.mil