1 Introduction

The purpose of this document is to address items and components on the Shane adaptive optics instrument (SAO) that require maintenance. The goal is to provide preventive procedures to avoid component failure or instrument downtime when routine maintenance affects instrument operations.

2 Components

2.1 Wavefront Sensor Steering Mirrors (WFSM)

2.1.1 Actuators

The procedure for greasing the lead screw on the actuators is covered in Reference 3.1. This should be periodically done every three months. This is based on experience and consultations with ThorLabs.

2.1.2 Drive Posts

The drive posts (actuator probe) should be cleaned and lubricated every three months. If possible unseat the mirror frame and remove the drive posts. Three can be done in this manner. One is constrained due to local interference by other components. Clean the posts with alcohol. Wipe first thoroughly then apply the alcohol, wipe dry. Using a lint free q-tip swab apply the grease (Reference 3.3) as a thin film. Return to the instrument and reset the mirror frame.

2.1.3 Flat Pins

The limit switch flag pins are treated the same way as the drive posts, except they cannot be removed. Clean and lubricate as much the pin as possible. In addition, also clean the ball tip and the back of the frame the ball contacts.

3 References

3.1 Z8 Series Motorized DC Servo Actuators, User Guide, ThorLabs

3.2 Steering Mirror Assy, WFSM, Drawing, SAO-0866

3.3 Jet-Plex EP, Lithium complex grease, Jet-Lube, Inc., Houston, Texas, Product Code 31750

4 Revision History

A Initial release, G. Cabak, preliminary draft, *(for August 2017)*