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## 1.8 Two-gyro Guiding

At the writing of this Handbook, HST will transition to two gyros in the guiding control loop in late August 2005. It may be possible to return to three gyro control in the event of an HST Servicing Mission. The decision to go to two gyro control was made to prolong the useful life of HST observing. Tests performed using two gyro control during February 2005 indicated that there were no unexpected guiding problems and that guiding stability (jitter) to  $\sim 6.2$  mas was achieved. Observations of a star field showed no degradation in the stellar PSF images. The observed coronagraphic performance was essentially unaffected at  $1.1 \mu\text{m}$ , while there was a marginal decline at  $1.6 \mu\text{m}$  of similar amplitude to that arising from other well-known HST/NICMOS orbit-driven instabilities, such as breathing and jitter. However, the number of minutes available for observation per orbit, the orientation range and the times of year when a given target can be scheduled have been affected. The amount of change depends upon the specific target and the observational constraints.



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*Further discussion of how two gyro control impacts NICMOS observing modes can be found in the Two Gyro Control Test Instrument Science Reports (ISRs). These are available on the NICMOS web site at <http://www.stsci.edu/hst/nicmos>.*

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