

Recent Developments With the FES Streak

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When the FES streak first appeared in late 1992, we began monitoring it for any indications of change (see Weinstein & Carini 1992, Carini *et al.* 1993). In recent months, we have seen that the streak characteristics have changed substantially.

The streak is still weak at low β angles, and shows a roughly linear increase in intensity toward higher β . What has changed in recent months is the approximate β at which the streak becomes significant. Until recently, the streak was significant for β s above about 60° ; this significant β has slowly increased, such that the streak now becomes important only above β s of about 70° (see Figure 1). At β s lower than about 70° , the intensity across the field is that of an $m \sim 8$ or $m \sim 9$ star, and does not significantly change with β . We stress that this only applies to those streaks caused by the Sun. An Earth streak can still be a problem, albeit usually a lesser one, at any β .

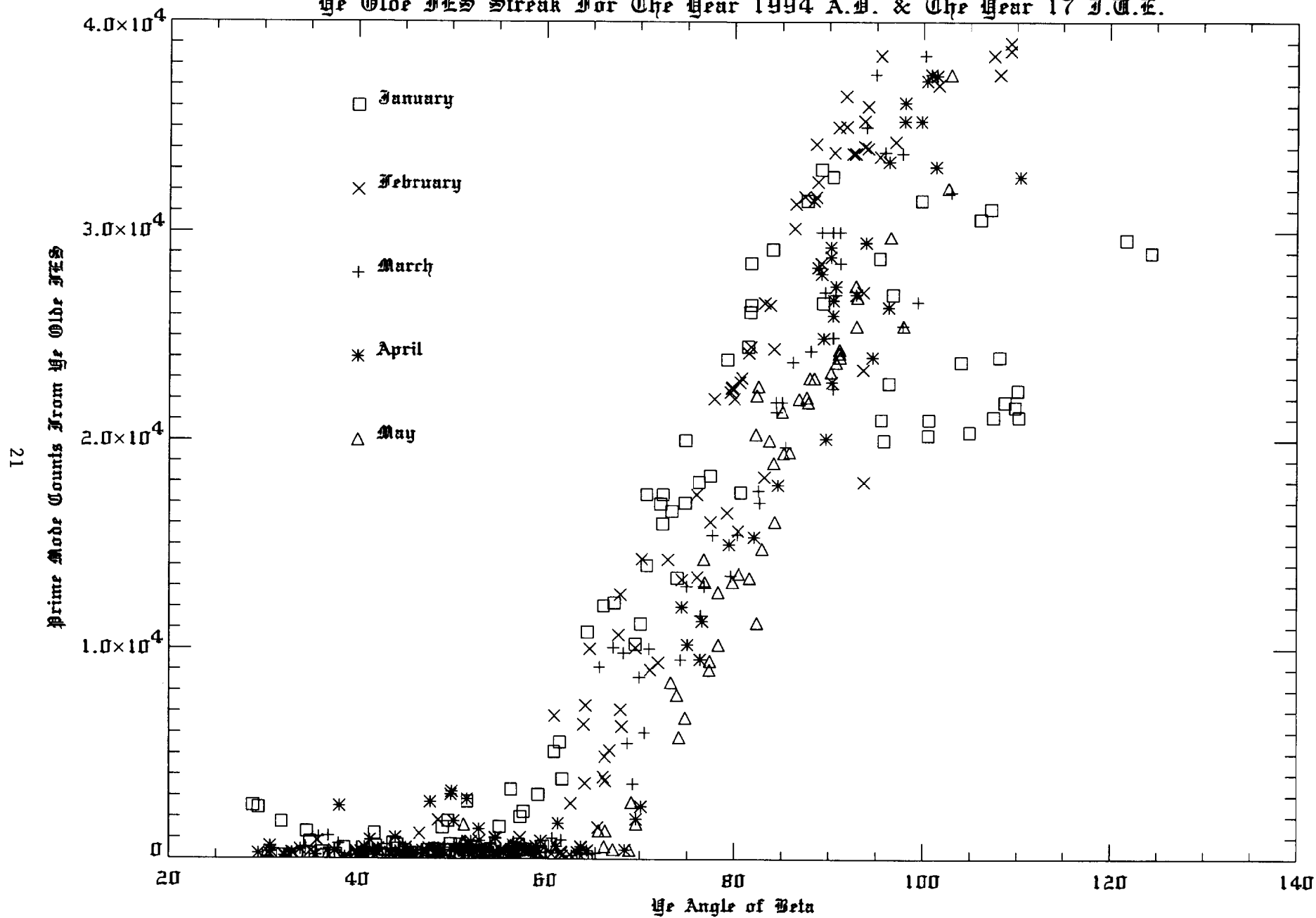
The presence of the streak still has an impact on science operations conducted by IUE. Low dispersion LWP images at high β can possess a solar spectrum in addition to that of the target, depending on the exposure time. Figure 2 shows the approximate contamination rate. Guide stars can be difficult to find, resulting in the necessity to break up exposures longer than about 15 minutes into segments; the segment lengths are usually increased as the spacecraft becomes more stable at the target β . Targets fainter than $m \sim 8$ may need to be acquired as blind offsets. Light curves derived from the FES are also difficult to obtain, since subtraction of the streak component may not be reliable. Previous newsletters have reported that the streak can be diminished by maneuvering the spacecraft to a high β and then back to the target; experience in the past year has shown that this operation no longer has any effect on the streak.

Despite these difficulties, the overall observing efficiency of IUE remains largely unchanged from its pre-streak average. Figure 3 shows the weekly average efficiency from January 1992 through early 1994 (Arquilla & Crabb 1994). The efficiency was obtained by dividing the total exposure time for each days US1 and US2 shifts into the time available during those shifts, from which a weekly average was derived. The average of 56.0% over the last six months is virtually identical to that value for the six months preceeding the onset of the streak.

References

- Arquilla, R., & Crabb, S. 1994, Report to the IUE Users Committee.
Carini, M., Weinstein, D., & Walker, T. 1993, *IUE Newsletter* #50, p. 27.
Weinstein, D., & Carini, M. 1992, *IUE Newsletter* #49, p. 5.

The Olde FES Streak For The Year 1994 A.D. & The Year 17 B.C.E.



Rate of Contamination By FES Streak On Ge Olde IMP Camera

