THE ULTRAVIOLET CALIBRATION OF THE HUBBLE SPACE TELESCOPE: III. A CORRECTION FOR THE CHANGE IN SENSITIVITY OF THE LWR CAMERA ON IUE

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Received: 1988 January 18 ; Accepted: 1988 April 20

To be published in the *Astrophysical Journal Supplement*, Vol. 68

ABSTRACT

The absolute photometric calibration of the Hubble Space Telescope (HST) in the UV will be based on low dispersion spectra obtained by IUE. Therefore, these data must be corrected for the substantial changes observed in the sensitivities of the IUE SWP and the LWR cameras. The previous paper in this series (Paper II) specified the correction in 5Å bins for SWP through 1986.36, while this Paper III details the corrections for LWR and provides an update for SWP through 1987.36. A total of 764 LWR spectra of 5 standard stars are analyzed to derive the annual change spectra for the three low dispersion observing modes.

By 1985 in the eighth year of IUE operations, the LWR sensitivity loss is as much as 20% in the 2200–2300Å range with a mean loss of 12% from 1925–3200Å. When our LWR correction technique is applied to those eighth year spectra for the five standard stars, the mean ratio to the first year spectra is 1.008 with an average scatter of 1.5% in 5Å bins from 1925–3200Å. In contrast, a correction algorithm developed by Clavel, Gilmozzi, and Prieto produces a mean ratio of 0.982 and 3.5% scatter when applied to these same spectra.

I. INTRODUCTION

In order to obtain precise absolute fluxes from IUE spectrophotometry, the losses in throughput must be known after establishing the baseline absolute calibration, which was most recently updated by Bohlin (1986) in Paper I. The LWR camera exhibits the most severe sensitivity changes, which have been studied by Sonneborn and Garhart (1987), by Holm (1985), and by Clavel, Gilmozzi, and Prieto (1988). Using the same standard stars and the same analysis technique as for SWP in Paper II by Bohlin and Grillmair (1988), the secular change in sensitivity is derived for the LWR camera. The technique for applying this correction to LWR spectra is the same as specified for SWP in Paper II. Table 1 itemizes the observations of the five IUE standard stars that are used to derive the corrections, where the aperture modes are trailed T, small aperture S, and large aperture point source L.

II. ANALYSIS TECHNIQUE

The procedure of Paper II is followed, using a recently determined temperature correction of $-0.7\%\ ^{\circ}C^{-1}$ (Sonneborn and Garhart 1987) and normalizing small aperture spectra to unity in the 2235–2360Å range.

Since there are no strong lines in LWR, the spectral masks that were used for SWP are not needed. However, several characteristics of LWR data require special treatment that is unnecessary for SWP:

Pings—All wavelength regions affected by microphonics are excluded from the solution. The early pings that are not automatically flagged by the production processing are identified from the photowrites.

Bright spots—Even on the short exposures required for the standard stars, bright spots often appear as spikes in LWR spectra. Each spectrum was examined in the 2180–2210Å range for the T and L modes and in the 2125–2135 and 2615–2625Å regions for S. All 5Å data points that exceed the mean continuum level by 10% for S and L and by 5% for T are flagged and omitted from the analysis.

Extrapolation spikes—In the region 2500–2900Å, errors in extrapolating the ITF to estimate the intensity for high signal levels occasionally cause spikes. All of these errors that exceed the continuum by 20% for S and L and by 10% for T are flagged for omission. This problem is rare with only 10 of these 5Å points found for T and 27 for L in the entire data set. For S, excessive extrapolation occurs somewhat more frequently, because higher exposures occur when the small aperture transmission happens to be high.

Noise at long wavelengths—Because of the weak response of LWR beyond about 3200Å, the signal is too low to measure reliable changes in sensitivity. Therefore, the corrections for each year in the 3200–3350Å range are the average correction for 3100–3195Å in the cases of S and L. For T, the corrections from 3250–3350Å are the average of the 3150–3245Å points.

Reduced high voltage—In March of 1985, the high voltage on the LWR camera was reduced from 5.0 to 4.5 kV for all science observations because of the growing flare. The calibration spectra that were obtained at 4.5 kV are included in this analysis after dividing the exposure times by 1.37 (Imhoff 1985, Harris 1985).

Table 2 contains the annual change spectra for LWR in 5Å bins along with the errors in the mean for each bin. The LWR corrections are determined for just the first eight years, since very few science observations have been obtained after 1986.36. Fig. 1 shows the large aperture results for the eight years in nine of the 5Å bins. The changes are *not* linear with time but generally show the gradual change that makes possible the linear interpolation in time from one year to the next. In a few cases longward of 3000Å, there are more abrupt changes, such as the difference between the corrections for 1981.81 and 1982.83 at 3175Å in Fig. 1. A quadratic interpolation scheme would differ by a few percent from the linear interpolation around the midpoint time of 1982.3; but to prove that quadratic interpolation is more accurate than linear interpolation would be difficult for these few wavelength points and limited time intervals. The difference between adjacent 5Å bins and occasional increase in sensitivity may be caused by the systematic motion of the spectral format across the camera faceplate at a rate of about 1 pixel per year (Thompson, Turnrose, and Bohlin 1982). More abrupt changes in the photocathode fine structure are to be expected in the tail of the Cs–Te sensitivity beyond 3000Å.

Table 3 contains an update of the SWP results of Paper II. These corrections are derived for 9 years through 1987.36, since observations of our HST standard stars continue to be obtained with the SWP.

III. TEST RESULTS

The LWR corrections are used according to the recipe and slightly modified version of the Fortran subroutine of Paper II. The LWR correction is tested by comparing the mean fluxes of the 5 standard stars in the first year of operations that began at 1978.36 to the mean fluxes in later years. All T, S, and L spectra in a given year are averaged to find the mean flux for each star. The S spectra are normalized to the mean T+L spectrum in the 2600–2775Å region. A large aperture length of 20.″5 (Panek 1982) is used for T spectra. The corresponding T/L ratio was rederived for this work, since the T/L ratio for LWR in Bohlin (1986) is low by about 3% on average. The fluxes for each star are divided by the baseline 1978 fluxes and a grand average of the 5 ratios is found in each 5Å bin. The mean of this grand average is computed from 1925–3200Å, along with the one sigma rms scatter, σ, about the mean.

Fig. 2 shows the grand average ratios, before applying any corrections, for 4 of the 7 years following the 1978 baseline year. By the 8th year (1985.36–1986.36), the loss in sensitivity is nearly 20% in the 2200–2300Å range and averages 12% from 1925–3200Å. Fig. 3 shows the same ratios as Fig. 2 after correction for the loss in sensitivity. After correction, the 8th year fluxes have a mean ratio to the baseline of 1.008 and a scatter about this mean of $\sigma = 1.5\%$. This result for LWR is somewhat worse than the corresponding result in Paper II for the 8th year of SWP, which has a mean ratio of 1.000 and $\sigma = 0.8\%$. Of the 5 stars, the 8th year ratio for the LWR spectra of the individual star BD+75°325 is 1.028 with $\sigma = 2.2\%$. Such a large systematic error is difficult to understand, although the 1985 level for BD+75°325 in the 8th year is based on only 7 L and 2 T spectra; and there is some evidence that LWR became gradually less photometric after demotion from the default camera on 1983 October 16 (Lloyd 1987).

Clavel, Gilmozzi, and Prieto (1988) have provided an alternate technique (CGP) for correcting the LWR sensitivity loss by assuming that the changes are linear in time and smooth in wavelength. The fallacy of these assumptions are illustrated in Fig. 1 and in Fig. 4. The need for a non-linear correction for the LWR degradation as a function of time is discussed in detail by Imhoff (1987). CPG defined mean corrections in 50Å bins, while the need for smaller wavelength intervals is demonstrated by the difference in the corrections for adjacent 5Å bins, as illustrated in Fig. 1. The ratios to the baseline year in Fig. 4 are for the same data as Fig. 2 and 3, but the CGP correction technique is used. For the 8th year, the accuracy of the CGP technique is 0.982 with $\sigma = 3.5\%$, in comparison with our values of 1.008 and 1.5% quoted above. A full comparison of the accuracies of the two methods for the worst star and for the mean of all 5 stars is in Table 4 for the 2nd, 4th, 6th, and 8th years. The total number of T+L spectra available in the 1978 baseline year is 78.

To verify the updated SWP corrections for the first 9 years in Table 3, the same 30 spectra from the 9th year that were corrected by extrapolation in Paper II are corrected without extrapolation. The mean ratio changed from the 1.002 quoted in Paper II to 0.997%, while σ is reduced from 1.7% to 1.2%. For the entire 9th year data set of 94 spectra the mean ratio is 1.002 with $\sigma = 1.0\%$. Typical changes to the SWP corrections for the fluxes in the first 8 years are less than 0.1% for point source spectra, while the trail corrections are as much as 0.5% lower in year 8.

IV. CONCLUSIONS

In summary, our correction technique for LWR is more precise than other methods that make assumptions about the linearity of the change with time or the smoothness with wavelength. Even though our accuracy is about a factor of two better than the CGP technique, the CGP method is slightly easier to implement and is precise enough for many applications. To aid other users, our correction files and Fortran subroutine can be provided via electronic mail. When the project to uniformly reprocess the entire IUE archive begins, our correction for the change in sensitivity of SWP and LWR is recommended after verification of its validity for the new ITFs.

We thank the enthusiastic IUE staff at the Goddard Space Flight Center for obtaining the data and making it available. D. Neill assisted in the preparation of the tables for publication.

TABLE 1
LWR OBSERVATIONS OF PROGRAM STARS BETWEEN 1978.36 AND 1986.36

Star	Exposure Time (s)[a]			No. of Spectra		
	T[b]	S[b]	L[b]	T[b]	S[b]	L[b]
HD60753	31 (22–40)	14 (9–21)	7 (5–9)	73	53	82
BD+75°325	88 (62–114)	48 (29–72)	24 (17–31)	24	59	86
HD93521	11 (8–15)	6 (4–9)	3 (2.1–4)	16	53	80
BD+33°2642	—	380 (225–570)	190 (133–247)	—	18	65
BD+28°4211	222 (155–288)	120 (72–180)	60 (42–78)	19	50	86

[a]Nominal commanded exposure time in seconds, with the acceptable range in parentheses.
[b]T – Trailed spectrum in large aperture. S – Source in small aperture. L – Point source centered in large aperture.

TABLE 2a

LWR SENSITIVITY CHANGES - TRAILED SPECTRA

λ (Å)	t=1978.97		t=1979.73		t=1981.06		t=1981.87		t=1982.97		t=1983.85		t=1984.98		t=1985.91	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
1850	1.000	1.5	0.953	2.3	0.959	0.9	1.037	1.5	0.810	1.4	0.911	1.6	0.826	1.3	0.762	2.1
1855	1.000	2.0	1.027	2.4	1.014	1.1	1.070	1.6	0.943	1.4	0.972	1.6	0.923	1.0	0.839	1.3
1860	1.000	3.3	0.861	6.5	0.951	2.0	1.014	2.4	0.915	1.5	0.924	1.6	0.861	1.1	0.753	1.3
1865	1.000	2.7	0.970	2.3	1.076	1.4	1.035	2.3	1.013	1.8	0.974	1.8	0.977	1.1	0.938	1.7
1870	1.000	1.5	1.013	3.6	1.064	1.2	1.048	1.6	1.006	1.3	0.945	1.6	0.905	1.2	0.818	1.6
1875	1.000	2.0	0.910	2.5	0.901	1.4	0.919	1.8	0.882	1.0	0.867	1.3	0.819	1.2	0.784	1.7
1880	1.000	2.0	0.917	2.2	0.984	0.9	0.947	1.2	0.935	1.2	0.902	1.3	0.883	1.0	0.835	2.0
1885	1.000	1.7	0.894	1.8	0.948	1.1	0.924	1.5	0.900	1.2	0.875	1.1	0.854	0.9	0.809	1.5
1890	1.000	2.0	0.949	1.7	0.994	1.3	0.964	1.1	0.941	1.1	0.924	1.7	0.898	0.8	0.878	1.1
1895	1.000	1.7	0.937	1.7	0.963	1.3	0.935	1.1	0.942	1.0	0.920	1.2	0.896	0.9	0.858	1.4
1900	1.000	1.7	0.941	1.9	1.022	1.1	0.978	1.5	0.938	0.9	0.893	1.1	0.906	1.0	0.869	1.2
1905	1.000	1.2	0.967	2.6	1.008	0.9	0.985	1.1	0.939	1.3	0.912	1.3	0.904	0.9	0.843	1.1
1910	1.000	0.8	0.968	2.3	1.014	1.3	0.989	0.9	0.950	1.0	0.928	1.4	0.896	0.9	0.837	1.0
1915	1.000	1.8	0.976	2.3	0.959	1.2	0.943	1.1	0.914	0.9	0.890	1.3	0.871	0.7	0.859	1.1
1920	1.000	1.5	0.956	3.4	1.039	0.7	1.002	1.1	0.970	1.0	0.914	1.1	0.930	0.8	0.871	1.2
1925	1.000	1.6	0.960	2.0	0.977	0.9	0.966	1.0	0.927	0.9	0.893	0.9	0.878	0.7	0.829	1.1
1930	1.000	1.4	0.947	1.9	0.971	1.0	0.948	1.1	0.921	0.9	0.911	1.2	0.903	0.7	0.852	0.9
1935	1.000	1.2	0.956	2.8	0.952	1.2	0.940	1.0	0.895	0.8	0.884	1.1	0.881	0.8	0.852	1.1
1940	1.000	1.3	0.925	1.8	0.957	0.7	0.927	1.1	0.902	0.8	0.860	0.9	0.837	0.8	0.803	1.1
1945	1.000	2.0	0.921	1.7	0.925	1.0	0.928	1.0	0.907	0.8	0.878	1.0	0.858	0.7	0.827	1.0
1950	1.000	1.5	0.946	1.7	0.936	0.9	0.925	1.0	0.885	0.7	0.869	0.9	0.845	0.6	0.821	1.0
1955	1.000	0.6	0.991	1.9	1.003	1.0	0.978	0.8	0.940	0.5	0.897	0.9	0.877	0.6	0.842	0.9
1960	1.000	1.2	0.995	1.7	0.993	1.0	0.969	1.1	0.931	0.8	0.884	0.9	0.881	0.7	0.841	0.9
1965	1.000	0.7	0.962	1.7	1.003	0.6	0.972	0.9	0.937	0.9	0.907	0.9	0.864	0.7	0.821	1.0
1970	1.000	1.3	0.939	1.7	0.956	1.0	0.953	1.3	0.915	0.9	0.884	1.0	0.868	0.8	0.834	0.9
1975	1.000	1.0	0.989	1.9	0.982	0.7	0.965	0.7	0.925	0.8	0.888	1.3	0.855	0.7	0.821	0.9
1980	1.000	0.5	1.016	1.7	0.978	0.5	0.992	0.9	0.960	0.8	0.936	0.7	0.909	0.6	0.870	0.9
1985	1.000	1.2	0.998	2.5	1.027	0.6	0.988	0.8	0.937	0.7	0.910	0.7	0.894	0.6	0.864	0.7
1990	1.000	1.2	0.983	2.1	0.968	0.9	0.950	0.9	0.915	0.6	0.892	0.9	0.888	0.7	0.847	1.0
1995	1.000	1.3	0.989	2.2	0.968	0.8	0.934	1.1	0.919	0.9	0.884	1.0	0.880	0.5	0.841	0.9
2000	1.000	1.3	1.014	1.8	1.039	1.1	0.998	1.0	0.959	0.5	0.925	1.0	0.920	0.7	0.868	0.8
2005	1.000	1.1	0.994	1.7	1.003	0.9	0.952	0.7	0.927	0.8	0.893	1.0	0.878	0.8	0.836	1.0
2010	1.000	1.5	0.994	2.0	0.959	0.6	0.934	0.9	0.901	0.7	0.875	0.8	0.844	0.8	0.814	1.0
2015	1.000	1.3	1.032	2.1	1.027	0.6	0.988	0.7	0.961	0.5	0.913	0.7	0.903	0.9	0.866	1.1
2020	1.000	0.7	1.020	1.9	0.998	0.7	0.975	0.8	0.915	1.0	0.879	0.9	0.859	0.6	0.818	1.0
2025	1.000	0.8	1.021	1.7	0.983	1.2	0.969	0.7	0.951	0.7	0.931	0.8	0.898	0.7	0.869	1.0
2030	1.000	0.9	1.000	1.7	0.992	0.9	0.963	0.7	0.926	0.7	0.898	1.0	0.869	0.6	0.830	0.9
2035	1.000	1.1	1.012	1.7	1.018	0.6	0.969	0.5	0.924	0.7	0.886	0.7	0.876	0.7	0.852	0.8
2040	1.000	1.4	0.983	1.9	0.960	0.8	0.948	0.8	0.929	0.7	0.888	0.8	0.863	0.6	0.823	0.9
2045	1.000	1.0	0.990	1.9	0.970	0.9	0.943	0.8	0.907	0.6	0.887	0.7	0.860	0.6	0.854	0.5
2050	1.000	0.9	0.992	2.4	0.986	0.9	0.969	1.0	0.941	0.7	0.926	0.9	0.889	0.6	0.856	1.0
2055	1.000	1.1	0.998	2.0	0.974	0.8	0.951	1.1	0.937	0.7	0.910	0.9	0.888	0.7	0.860	1.0
2060	1.000	1.1	0.998	2.0	0.973	0.9	0.947	1.1	0.937	0.7	0.911	0.8	0.886	0.6	0.857	1.0
2065	1.000	1.1	0.969	1.9	0.940	0.9	0.918	1.2	0.904	0.8	0.870	0.9	0.846	0.5	0.821	1.1
2070	1.000	1.1	0.990	1.7	1.017	0.6	0.966	0.9	0.939	0.7	0.893	1.0	0.870	0.6	0.842	1.0
2075	1.000	1.4	1.004	2.0	1.004	0.7	0.966	0.8	0.929	0.7	0.897	0.8	0.889	0.6	0.863	0.6
2080	1.000	1.3	0.993	2.1	1.015	0.9	0.995	0.6	0.939	0.7	0.915	0.7	0.900	0.6	0.850	0.8
2085	1.000	0.7	0.996	1.7	1.007	0.8	0.985	0.7	0.942	0.7	0.904	0.8	0.906	0.7	0.879	0.7
2090	1.000	1.1	0.979	2.1	0.969	0.7	0.967	0.6	0.917	0.7	0.888	0.7	0.867	0.6	0.832	0.7
2095	1.000	1.0	0.979	2.0	0.955	0.9	0.931	0.7	0.922	0.8	0.901	0.8	0.864	0.6	0.844	0.8
2100	1.000	0.7	0.985	1.7	0.977	0.9	0.916	0.6	0.903	0.8	0.874	1.1	0.835	0.7	0.809	0.8
2105	1.000	0.6	0.960	2.2	0.988	0.8	0.928	0.8	0.908	0.6	0.866	1.0	0.861	0.5	0.831	0.7
2110	1.000	0.8	0.983	1.7	1.000	0.9	0.946	1.2	0.907	0.7	0.865	1.0	0.846	0.4	0.819	0.8
2115	1.000	0.9	1.011	1.7	1.019	0.8	0.984	0.8	0.947	0.8	0.913	0.9	0.880	0.6	0.839	0.9
2120	1.000	1.1	1.019	1.8	1.003	0.8	0.979	0.8	0.958	0.7	0.940	0.5	0.919	0.7	0.907	0.8

TABLE 2a - *Continued*

LWR SENSITIVITY CHANGES - TRAILED SPECTRA

λ (Å)	t=1978.97 f(t)	σ(%)	t=1979.73 f(t)	σ(%)	t=1981.06 f(t)	σ(%)	t=1981.87 f(t)	σ(%)	t=1982.97 f(t)	σ(%)	t=1983.85 f(t)	σ(%)	t=1984.98 f(t)	σ(%)	t=1985.91 f(t)	σ(%)
2125	1.000	1.4	0.987	2.0	0.986	0.8	0.942	0.8	0.890	0.7	0.853	1.0	0.843	0.7	0.810	0.9
2130	1.000	0.9	0.999	2.0	0.998	0.8	0.961	0.7	0.937	0.7	0.928	0.7	0.898	0.6	0.837	1.0
2135	1.000	0.8	0.979	1.7	0.957	0.7	0.917	0.7	0.888	0.7	0.874	0.6	0.861	0.6	0.823	0.9
2140	1.000	0.6	0.977	1.9	0.984	0.7	0.951	0.8	0.914	0.8	0.891	0.9	0.864	0.5	0.834	1.0
2145	1.000	1.2	0.970	1.7	1.000	0.9	0.946	0.9	0.924	0.8	0.901	1.0	0.883	0.5	0.828	0.5
2150	1.000	1.0	0.980	1.7	0.971	0.9	0.937	1.0	0.896	0.8	0.881	0.6	0.874	0.7	0.852	0.4
2155	1.000	1.4	0.969	1.7	0.995	0.8	0.974	0.7	0.921	0.7	0.888	1.0	0.862	0.8	0.813	0.9
2160	1.000	1.6	1.021	1.7	1.022	0.6	0.943	0.7	0.913	0.7	0.897	0.9	0.894	0.4	0.884	0.9
2165	1.000	1.1	0.983	1.7	0.986	0.7	0.938	0.7	0.909	0.7	0.888	1.1	0.870	0.6	0.843	0.9
2170	1.000	1.3	0.974	1.7	1.012	0.7	0.988	0.6	0.930	0.8	0.893	0.9	0.881	0.5	0.856	0.8
2175	1.000	1.8	0.937	1.8	0.979	0.8	0.940	0.8	0.922	0.8	0.885	0.8	0.871	0.6	0.846	0.9
2180	1.000	1.5	0.941	1.8	0.968	0.6	0.909	0.8	0.889	0.7	0.854	0.6	0.858	0.7	0.831	0.9
2185	1.000	1.3	0.995	1.9	0.993	1.0	0.935	0.6	0.920	0.7	0.886	0.7	0.876	0.6	0.837	0.9
2190	1.000	1.2	0.949	2.2	0.985	1.3	0.913	0.6	0.881	0.8	0.853	0.8	0.820	0.5	0.781	1.0
2195	1.000	1.3	0.992	2.4	0.980	1.4	0.923	0.8	0.899	0.6	0.869	0.8	0.827	0.5	0.808	0.7
2200	1.000	1.3	0.000	0.0	0.982	1.7	0.947	0.7	0.923	0.7	0.869	1.2	0.854	0.4	0.828	0.7
2205	1.000	1.0	0.000	0.0	0.965	0.5	0.901	0.8	0.887	0.7	0.858	0.6	0.829	0.6	0.820	1.2
2210	1.000	0.7	0.949	1.7	0.919	1.0	0.881	0.7	0.854	0.6	0.830	0.8	0.824	0.6	0.786	0.9
2215	1.000	1.2	0.961	1.7	0.938	1.0	0.905	0.8	0.867	0.7	0.829	1.0	0.820	0.7	0.789	1.2
2220	1.000	1.1	0.982	1.7	0.991	0.9	0.933	0.7	0.921	0.8	0.901	0.9	0.881	0.4	0.844	0.8
2225	1.000	1.6	0.942	1.7	0.981	0.9	0.931	0.8	0.892	0.7	0.854	0.7	0.847	0.5	0.825	0.7
2230	1.000	1.4	0.946	2.1	0.958	0.8	0.906	0.8	0.885	0.9	0.864	0.9	0.844	0.7	0.815	0.7
2235	1.000	1.3	0.947	2.0	0.960	1.0	0.902	0.7	0.864	0.7	0.830	0.9	0.829	0.7	0.792	0.9
2240	1.000	1.1	0.933	2.0	0.959	1.0	0.908	0.7	0.886	0.7	0.842	1.0	0.835	0.7	0.787	0.7
2245	1.000	1.4	0.933	1.7	0.959	0.6	0.904	0.7	0.887	0.9	0.854	1.0	0.859	0.7	0.830	0.6
2250	1.000	1.1	0.987	1.8	0.979	0.7	0.918	0.7	0.858	0.7	0.831	1.0	0.823	0.5	0.788	0.7
2255	1.000	0.9	0.951	1.7	0.967	0.8	0.927	0.8	0.877	0.7	0.856	0.9	0.825	0.4	0.788	1.1
2260	1.000	1.2	0.946	1.7	0.970	0.5	0.943	0.7	0.905	0.6	0.882	0.9	0.861	0.5	0.815	0.8
2265	1.000	1.0	0.979	1.7	0.967	0.8	0.945	0.7	0.918	0.7	0.901	0.8	0.893	0.6	0.868	0.7
2270	1.000	0.9	0.969	1.7	0.955	0.9	0.913	0.7	0.880	0.7	0.857	0.9	0.843	0.8	0.826	1.0
2275	1.000	0.7	0.926	1.7	0.932	0.6	0.881	0.6	0.849	0.8	0.823	0.8	0.811	0.6	0.771	0.7
2280	1.000	1.1	0.965	1.7	0.961	0.9	0.930	0.8	0.887	0.5	0.868	0.8	0.855	0.5	0.819	0.9
2285	1.000	0.5	0.960	1.7	0.953	0.6	0.905	0.7	0.878	0.8	0.858	0.9	0.855	0.4	0.838	1.0
2290	1.000	1.0	0.970	1.7	0.974	0.5	0.924	0.6	0.882	0.8	0.854	0.9	0.825	0.6	0.797	0.9
2295	1.000	1.2	0.932	1.9	0.945	0.6	0.901	1.0	0.871	0.7	0.844	0.8	0.828	0.5	0.797	1.0
2300	1.000	1.0	0.954	1.8	0.939	0.9	0.904	0.8	0.877	0.8	0.848	0.6	0.827	0.6	0.806	0.7
2305	1.000	1.0	0.954	1.7	0.957	0.7	0.935	1.0	0.890	0.9	0.852	0.9	0.840	0.7	0.803	0.8
2310	1.000	1.0	0.969	1.7	0.975	0.7	0.924	0.6	0.879	0.8	0.860	0.6	0.854	0.7	0.823	0.8
2315	1.000	1.0	0.953	2.8	0.959	0.9	0.901	0.6	0.867	1.1	0.836	0.9	0.805	0.6	0.760	0.8
2320	1.000	0.6	0.939	1.7	0.940	0.7	0.891	0.4	0.867	0.8	0.845	0.8	0.825	0.6	0.806	1.0
2325	1.000	0.9	0.944	1.7	0.929	0.8	0.892	0.6	0.894	0.7	0.879	0.8	0.857	0.6	0.841	0.8
2330	1.000	1.2	0.960	1.7	0.976	0.6	0.919	0.6	0.856	0.9	0.827	0.8	0.811	0.5	0.790	0.6
2335	1.000	1.2	0.973	2.1	0.963	0.7	0.931	0.6	0.897	0.6	0.872	0.9	0.850	0.5	0.808	0.9
2340	1.000	1.2	0.963	1.8	0.968	1.0	0.929	0.7	0.891	0.5	0.872	0.7	0.845	0.6	0.827	1.1
2345	1.000	0.8	0.946	2.0	0.949	0.8	0.902	0.8	0.879	0.7	0.860	0.6	0.840	0.3	0.815	0.9
2350	1.000	0.6	0.917	2.1	0.925	1.1	0.892	0.9	0.867	0.6	0.843	0.6	0.821	0.8	0.794	0.9
2355	1.000	0.7	0.964	2.1	0.945	1.0	0.911	0.8	0.862	0.7	0.845	0.8	0.821	0.6	0.794	0.4
2360	1.000	0.5	0.937	2.1	0.947	0.6	0.919	0.8	0.868	0.7	0.831	0.8	0.822	0.7	0.783	0.8
2365	1.000	0.9	0.934	1.9	0.942	0.7	0.912	0.7	0.887	0.6	0.863	0.7	0.854	0.5	0.823	0.8
2370	1.000	0.7	0.942	2.2	0.937	1.0	0.911	0.8	0.879	0.5	0.852	0.7	0.841	0.5	0.805	0.9
2375	1.000	1.1	0.937	2.8	0.956	0.7	0.930	0.6	0.900	0.6	0.862	0.7	0.863	0.4	0.848	0.8
2380	1.000	0.9	0.942	3.3	0.967	0.9	0.922	0.8	0.890	0.8	0.858	0.7	0.851	0.6	0.815	1.0
2385	1.000	0.5	0.969	2.0	0.932	0.9	0.910	0.8	0.872	0.8	0.847	0.9	0.846	0.7	0.829	0.8
2390	1.000	1.3	0.911	1.7	0.924	1.0	0.908	0.7	0.881	0.6	0.860	0.7	0.832	0.7	0.789	0.7
2395	1.000	1.5	0.928	2.8	0.962	1.2	0.931	0.8	0.918	0.7	0.905	0.7	0.895	0.5	0.859	0.9

TABLE 2a - *Continued*

LWR SENSITIVITY CHANGES - TRAILED SPECTRA

λ (Å)	t=1978.97 f(t)	σ(%)	t=1979.73 f(t)	σ(%)	t=1981.06 f(t)	σ(%)	t=1981.87 f(t)	σ(%)	t=1982.97 f(t)	σ(%)	t=1983.85 f(t)	σ(%)	t=1984.98 f(t)	σ(%)	t=1985.91 f(t)	σ(%)
2400	1.000	1.1	0.968	2.6	0.970	0.7	0.936	0.6	0.881	0.8	0.851	0.8	0.830	0.4	0.803	0.8
2405	1.000	1.2	0.962	1.7	0.940	0.9	0.932	0.3	0.896	0.6	0.875	0.7	0.853	0.6	0.824	0.8
2410	1.000	1.2	0.944	1.9	0.966	0.9	0.943	0.7	0.914	0.5	0.876	0.8	0.865	0.6	0.845	0.9
2415	1.000	1.2	0.947	1.7	0.962	0.7	0.942	0.7	0.899	0.7	0.874	0.7	0.856	0.6	0.821	0.8
2420	1.000	1.2	0.937	2.0	0.961	1.0	0.943	0.7	0.921	0.6	0.892	0.7	0.886	0.6	0.855	0.6
2425	1.000	0.9	0.970	1.9	0.980	0.8	0.954	0.7	0.910	0.6	0.884	0.9	0.874	0.6	0.842	0.7
2430	1.000	1.1	1.009	1.9	0.998	0.6	0.968	0.8	0.919	0.6	0.880	0.8	0.865	0.4	0.821	0.9
2435	1.000	1.0	0.954	1.8	0.952	0.5	0.947	0.6	0.927	0.7	0.893	0.7	0.888	0.5	0.859	0.8
2440	1.000	0.7	0.944	1.8	0.968	0.8	0.942	0.5	0.918	0.7	0.876	0.9	0.877	0.5	0.836	0.7
2445	1.000	0.9	0.957	1.7	0.942	1.0	0.926	0.7	0.896	0.4	0.882	0.7	0.875	0.4	0.843	0.7
2450	1.000	1.0	0.970	1.7	0.947	0.9	0.934	0.8	0.880	0.7	0.858	0.8	0.854	0.4	0.813	0.9
2455	1.000	0.9	1.007	2.1	0.989	0.8	0.965	0.6	0.932	0.6	0.886	0.8	0.884	0.7	0.842	1.0
2460	1.000	1.1	0.982	1.7	0.970	0.8	0.949	0.6	0.908	0.5	0.877	0.8	0.862	0.5	0.842	0.7
2465	1.000	1.3	0.994	1.7	1.013	0.8	0.985	0.5	0.951	0.5	0.913	0.7	0.903	0.6	0.860	0.8
2470	1.000	0.8	0.984	2.0	0.981	0.8	0.962	0.6	0.944	0.5	0.926	0.7	0.910	0.5	0.883	0.8
2475	1.000	1.1	0.955	1.8	0.993	0.7	0.969	0.7	0.928	0.7	0.909	0.8	0.904	0.5	0.876	1.1
2480	1.000	1.1	0.977	1.7	0.993	0.8	0.976	0.7	0.922	0.5	0.890	0.8	0.865	0.6	0.835	0.7
2485	1.000	1.1	0.979	2.1	0.990	0.9	0.970	0.9	0.937	0.5	0.910	0.6	0.901	0.5	0.884	0.8
2490	1.000	1.0	0.955	1.9	0.954	0.7	0.941	0.6	0.920	0.5	0.893	0.7	0.900	0.4	0.867	0.9
2495	1.000	0.7	0.937	1.7	0.942	0.9	0.952	0.9	0.914	0.5	0.892	0.7	0.887	0.4	0.871	0.7
2500	1.000	0.9	0.963	1.8	0.951	0.9	0.937	0.6	0.920	0.6	0.900	0.7	0.899	0.5	0.861	0.8
2505	1.000	1.0	0.953	1.7	0.947	0.9	0.935	0.7	0.913	0.5	0.896	0.7	0.895	0.5	0.864	0.7
2510	1.000	0.7	0.981	1.7	0.968	0.9	0.950	0.6	0.942	0.5	0.923	0.7	0.908	0.3	0.873	0.8
2515	1.000	1.4	0.949	1.8	0.971	0.9	0.959	0.7	0.905	0.6	0.879	0.7	0.873	0.4	0.842	0.6
2520	1.000	0.9	0.900	2.1	0.948	1.0	0.950	0.8	0.930	0.7	0.913	0.6	0.899	0.6	0.877	0.8
2525	1.000	0.8	0.956	1.7	0.946	0.7	0.936	0.8	0.911	0.6	0.888	0.6	0.897	0.6	0.880	0.9
2530	1.000	0.9	0.987	1.7	0.971	0.9	0.940	0.6	0.905	0.6	0.877	0.9	0.868	0.5	0.838	0.9
2535	1.000	0.9	0.992	1.9	0.986	0.9	0.964	0.7	0.956	0.6	0.927	0.7	0.917	0.5	0.875	0.9
2540	1.000	0.7	0.985	1.7	0.967	0.6	0.945	0.6	0.905	0.6	0.878	0.5	0.880	0.4	0.848	0.8
2545	1.000	0.9	0.946	2.1	0.966	0.7	0.936	0.7	0.903	0.7	0.876	0.7	0.868	0.6	0.830	0.7
2550	1.000	1.0	0.943	1.9	0.973	0.8	0.952	0.4	0.928	0.6	0.910	0.6	0.893	0.5	0.855	0.5
2555	1.000	1.0	0.958	1.9	0.965	1.0	0.967	0.8	0.946	0.7	0.918	0.7	0.919	0.4	0.886	0.6
2560	1.000	0.9	0.964	2.1	0.972	0.9	0.946	0.6	0.915	0.6	0.892	0.7	0.900	0.5	0.875	0.6
2565	1.000	1.1	0.935	1.7	0.937	0.9	0.922	0.7	0.908	0.6	0.883	0.7	0.878	0.5	0.866	0.4
2570	1.000	1.1	0.936	2.4	0.980	1.0	0.962	0.7	0.910	0.6	0.883	0.9	0.862	0.5	0.834	0.8
2575	1.000	1.1	0.945	2.0	0.987	0.8	0.988	0.5	0.953	0.5	0.940	0.7	0.922	0.5	0.896	0.5
2580	1.000	1.2	0.952	1.9	0.984	0.9	0.976	0.6	0.937	0.5	0.919	0.7	0.910	0.4	0.896	0.5
2585	1.000	1.2	0.955	1.9	0.976	0.9	0.968	0.6	0.936	0.5	0.922	0.7	0.911	0.4	0.897	0.6
2590	1.000	1.2	0.955	1.7	0.970	1.0	0.955	0.7	0.917	0.5	0.900	0.9	0.886	0.6	0.879	0.8
2595	1.000	0.8	0.942	1.7	0.984	0.8	0.964	0.5	0.912	0.6	0.895	0.6	0.888	0.5	0.860	0.7
2600	1.000	0.9	0.946	1.7	0.964	0.6	0.957	0.6	0.938	0.6	0.927	0.8	0.904	0.6	0.874	0.7
2605	1.000	0.9	0.969	1.7	0.987	0.5	0.967	0.6	0.936	0.5	0.908	0.7	0.898	0.5	0.883	0.8
2610	1.000	0.7	0.973	1.7	0.973	0.8	0.959	0.7	0.927	0.6	0.898	0.6	0.892	0.6	0.858	0.9
2615	1.000	1.2	0.980	1.7	0.988	0.8	0.974	0.6	0.947	0.6	0.916	0.8	0.898	0.4	0.868	0.7
2620	1.000	1.0	0.982	1.7	0.978	0.7	0.963	0.6	0.927	0.6	0.919	0.6	0.904	0.4	0.886	0.6
2625	1.000	1.1	0.978	1.7	0.986	0.6	0.959	0.6	0.925	0.6	0.903	0.7	0.899	0.5	0.877	0.7
2630	1.000	0.8	0.983	1.7	0.968	0.5	0.950	0.6	0.926	0.5	0.901	0.8	0.901	0.5	0.891	0.9
2635	1.000	0.5	0.987	2.1	0.990	0.8	0.954	0.7	0.906	0.6	0.880	0.8	0.865	0.5	0.837	0.8
2640	1.000	1.0	0.961	1.7	0.972	0.7	0.959	0.5	0.945	0.5	0.916	0.8	0.901	0.5	0.869	0.6
2645	1.000	1.0	0.968	2.0	0.987	0.8	0.981	0.6	0.943	0.5	0.920	0.8	0.910	0.5	0.890	0.7
2650	1.000	0.9	0.968	2.0	1.002	0.8	0.981	0.3	0.945	0.4	0.926	0.6	0.898	0.4	0.883	0.7
2655	1.000	0.7	0.958	2.0	0.997	0.9	0.973	0.4	0.931	0.6	0.914	0.6	0.890	0.4	0.876	0.7
2660	1.000	0.6	0.945	2.0	0.965	0.9	0.951	0.6	0.932	0.6	0.912	0.7	0.896	0.5	0.869	0.8
2665	1.000	0.9	0.948	1.7	0.959	0.7	0.942	0.6	0.905	0.6	0.896	0.5	0.874	0.5	0.864	0.7
2670	1.000	1.0	0.941	1.7	0.956	0.8	0.947	0.6	0.928	0.5	0.903	0.6	0.884	0.5	0.861	0.7

TABLE 2a - *Continued*

LWR SENSITIVITY CHANGES - TRAILED SPECTRA

λ (Å)	t=1978.97		t=1979.73		t=1981.06		t=1981.87		t=1982.97		t=1983.85		t=1984.98		t=1985.91	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
2675	1.000	1.0	0.955	1.7	0.978	0.6	0.953	0.7	0.935	0.5	0.905	0.7	0.876	0.3	0.859	0.9
2680	1.000	0.7	0.961	1.7	0.971	0.9	0.949	0.6	0.921	0.5	0.893	0.8	0.873	0.5	0.840	0.8
2685	1.000	0.5	0.972	1.7	0.962	0.9	0.948	0.5	0.920	0.5	0.892	0.7	0.877	0.5	0.854	0.8
2690	1.000	0.7	0.957	1.7	0.963	0.8	0.950	0.8	0.932	0.7	0.906	0.6	0.905	0.5	0.873	0.9
2695	1.000	0.8	0.955	1.7	0.965	0.6	0.944	0.5	0.932	0.6	0.913	0.6	0.915	0.5	0.907	0.5
2700	1.000	0.9	0.968	1.7	0.955	0.7	0.959	0.9	0.934	0.5	0.909	0.7	0.894	0.5	0.873	0.8
2705	1.000	0.9	0.964	1.7	0.990	0.5	0.972	0.9	0.920	0.5	0.888	0.8	0.865	0.5	0.833	0.7
2710	1.000	0.7	0.963	1.7	1.001	0.6	0.977	0.5	0.971	0.4	0.935	0.8	0.915	0.4	0.885	0.7
2715	1.000	0.6	0.980	1.7	0.982	0.8	0.951	0.6	0.925	0.5	0.900	0.5	0.898	0.6	0.896	0.7
2720	1.000	0.9	0.961	1.7	0.978	0.9	0.974	0.8	0.944	0.4	0.921	0.7	0.917	0.5	0.885	0.8
2725	1.000	1.1	0.965	1.7	0.961	0.9	0.958	0.4	0.931	0.6	0.908	0.7	0.889	0.4	0.867	0.7
2730	1.000	1.1	0.990	1.7	0.981	0.5	0.969	0.7	0.940	0.5	0.908	0.6	0.893	0.4	0.854	0.7
2735	1.000	0.9	0.972	1.7	0.971	0.7	0.955	0.8	0.916	0.5	0.884	0.6	0.871	0.7	0.839	0.6
2740	1.000	0.9	0.938	1.7	0.989	0.7	0.968	0.5	0.953	0.6	0.939	0.5	0.921	0.6	0.894	0.8
2745	1.000	0.8	0.987	1.7	0.974	0.5	0.970	0.6	0.942	0.6	0.911	0.7	0.901	0.5	0.878	0.6
2750	1.000	0.8	0.985	1.9	0.983	0.6	0.970	0.6	0.929	0.6	0.905	0.6	0.888	0.6	0.870	0.6
2755	1.000	1.0	0.975	2.1	0.987	0.5	0.975	0.8	0.942	0.5	0.919	0.7	0.910	0.6	0.882	0.7
2760	1.000	0.8	0.969	1.7	0.991	0.7	0.962	0.5	0.921	0.6	0.894	0.7	0.892	0.5	0.870	0.8
2765	1.000	0.5	0.995	2.0	1.022	0.5	0.978	0.7	0.953	0.5	0.935	0.8	0.925	0.6	0.890	0.8
2770	1.000	0.8	0.986	1.8	1.000	0.9	0.980	0.7	0.955	0.5	0.936	0.9	0.934	0.6	0.914	0.9
2775	1.000	1.3	0.968	1.7	0.977	0.8	0.970	0.7	0.955	0.5	0.916	0.7	0.920	0.7	0.892	0.8
2780	1.000	1.3	0.978	1.7	0.979	0.3	0.967	0.4	0.961	0.7	0.926	0.6	0.921	0.5	0.899	0.5
2785	1.000	1.2	0.974	1.7	0.975	0.3	0.958	0.6	0.933	0.5	0.899	0.6	0.902	0.5	0.882	0.5
2790	1.000	1.1	0.979	1.7	0.984	0.4	0.954	0.8	0.932	0.6	0.898	0.6	0.901	0.5	0.876	0.5
2795	1.000	0.9	0.999	1.7	0.979	0.3	0.958	0.7	0.941	0.8	0.923	0.7	0.920	0.4	0.895	0.8
2800	1.000	0.4	1.000	1.7	0.974	0.9	0.943	0.6	0.927	0.6	0.897	0.8	0.895	0.7	0.872	0.7
2805	1.000	1.0	0.981	1.7	0.993	0.8	0.956	0.9	0.918	0.6	0.889	1.1	0.874	0.6	0.848	0.8
2810	1.000	1.3	0.981	1.7	0.998	0.9	0.982	0.7	0.962	0.6	0.921	0.8	0.923	0.7	0.866	0.9
2815	1.000	1.0	0.970	1.7	0.976	0.9	0.964	0.6	0.930	0.5	0.902	0.7	0.906	0.6	0.896	0.8
2820	1.000	0.6	1.003	2.1	0.982	0.7	0.979	0.6	0.953	0.6	0.934	0.6	0.914	0.6	0.886	0.5
2825	1.000	0.8	0.994	1.7	0.967	0.7	0.949	0.5	0.924	0.4	0.907	0.6	0.908	0.4	0.887	0.7
2830	1.000	0.7	0.954	1.7	0.957	0.9	0.942	0.7	0.923	0.5	0.905	0.5	0.896	0.6	0.881	0.6
2835	1.000	1.0	0.973	1.7	0.992	0.7	0.960	0.8	0.926	0.5	0.906	0.8	0.884	0.4	0.872	0.9
2840	1.000	0.8	0.979	1.7	0.990	0.9	0.969	0.4	0.948	0.5	0.921	0.8	0.916	0.7	0.887	0.7
2845	1.000	0.9	0.993	1.7	0.990	0.7	0.977	0.7	0.968	0.5	0.941	0.8	0.922	0.7	0.885	0.6
2850	1.000	1.0	0.979	1.8	0.978	0.4	0.943	0.5	0.924	0.4	0.904	0.5	0.881	0.5	0.864	0.4
2855	1.000	1.2	0.981	1.9	1.012	0.6	0.968	0.6	0.957	0.5	0.931	0.8	0.916	0.6	0.878	0.8
2860	1.000	0.9	0.979	1.7	0.984	0.8	0.963	0.6	0.930	0.4	0.907	0.8	0.901	0.5	0.862	0.5
2865	1.000	1.0	0.963	1.7	0.983	0.8	0.962	0.3	0.943	0.5	0.919	0.7	0.908	0.4	0.874	0.7
2870	1.000	0.9	0.976	1.7	0.971	0.9	0.937	0.5	0.911	0.6	0.878	0.7	0.876	0.6	0.858	0.9
2875	1.000	0.7	0.990	1.7	0.960	1.0	0.965	0.7	0.940	0.5	0.913	0.7	0.904	0.7	0.869	0.7
2880	1.000	0.9	0.978	1.8	0.974	0.5	0.950	0.5	0.932	0.5	0.897	0.5	0.888	0.5	0.864	0.6
2885	1.000	0.7	1.003	1.7	0.984	0.4	0.976	0.6	0.966	0.4	0.941	0.5	0.933	0.5	0.910	1.0
2890	1.000	1.4	0.990	2.0	0.991	0.7	0.967	0.7	0.926	0.5	0.901	0.6	0.885	0.4	0.879	1.0
2895	1.000	0.8	0.967	1.7	0.992	0.7	0.965	0.7	0.927	0.5	0.900	0.5	0.905	0.5	0.868	1.0
2900	1.000	0.8	0.975	1.7	0.977	0.8	0.952	0.5	0.947	0.5	0.921	1.0	0.913	0.5	0.890	1.0
2905	1.000	0.8	0.977	1.7	0.963	1.0	0.937	0.7	0.912	0.6	0.896	0.5	0.901	0.4	0.878	1.0
2910	1.000	1.2	1.001	1.7	1.005	0.9	0.969	0.5	0.947	0.5	0.921	0.5	0.914	0.5	0.870	1.1
2915	1.000	0.8	0.997	1.7	0.994	0.9	0.978	0.8	0.950	0.5	0.911	0.7	0.912	0.5	0.875	1.1
2920	1.000	0.9	0.985	1.7	0.978	0.7	0.980	0.6	0.944	0.6	0.926	0.7	0.926	0.5	0.889	1.0
2925	1.000	1.0	0.986	1.9	0.982	1.0	0.979	0.6	0.953	0.5	0.933	0.6	0.928	0.3	0.905	1.0
2930	1.000	0.9	0.984	1.7	0.994	0.7	0.973	0.6	0.953	0.6	0.928	0.7	0.914	0.3	0.896	1.1
2935	1.000	0.7	0.976	1.7	1.001	0.4	0.961	0.5	0.955	0.6	0.933	0.8	0.908	0.3	0.887	1.1
2940	1.000	1.0	0.953	2.0	0.984	0.9	0.944	0.7	0.929	0.6	0.900	0.8	0.897	0.4	0.875	1.1
2945	1.000	0.8	0.993	1.8	0.987	0.6	0.973	0.3	0.952	0.6	0.926	0.7	0.906	0.5	0.871	1.1

TABLE 2a - *Continued*

LWR SENSITIVITY CHANGES - TRAILED SPECTRA

λ (Å)	t=1978.97 f(t)	σ(%)	t=1979.73 f(t)	σ(%)	t=1981.06 f(t)	σ(%)	t=1981.87 f(t)	σ(%)	t=1982.97 f(t)	σ(%)	t=1983.85 f(t)	σ(%)	t=1984.98 f(t)	σ(%)	t=1985.91 f(t)	σ(%)
2950	1.000	0.5	0.997	1.7	1.001	0.6	0.971	0.4	0.930	0.5	0.905	0.7	0.900	0.3	0.881	1.1
2955	1.000	0.8	0.964	1.7	0.972	0.4	0.939	0.5	0.913	0.6	0.891	0.7	0.881	0.3	0.853	1.1
2960	1.000	0.9	0.975	1.7	0.994	0.4	0.975	0.6	0.940	0.6	0.921	0.5	0.902	0.5	0.869	1.3
2965	1.000	0.8	1.015	1.7	1.015	0.7	0.996	0.7	0.962	0.7	0.935	0.5	0.923	0.5	0.890	0.8
2970	1.000	0.9	0.977	1.7	0.971	0.9	0.955	0.3	0.938	0.5	0.901	0.7	0.905	0.4	0.888	1.0
2975	1.000	0.8	0.964	1.9	0.982	1.0	0.965	0.5	0.941	0.5	0.910	0.6	0.918	0.6	0.901	1.0
2980	1.000	0.7	0.976	1.7	0.995	0.6	0.971	0.8	0.973	0.6	0.948	0.5	0.942	0.6	0.913	1.0
2985	1.000	0.7	1.003	1.7	0.988	0.4	0.966	0.6	0.952	0.6	0.931	0.6	0.919	0.4	0.900	0.9
2990	1.000	1.2	1.026	1.7	1.058	0.5	1.018	0.7	0.989	0.7	0.957	0.7	0.954	0.4	0.919	0.9
2995	1.000	1.0	0.996	1.7	1.021	0.9	1.004	0.7	0.975	0.7	0.950	0.7	0.950	0.5	0.925	0.7
3000	1.000	0.8	0.974	1.7	1.032	0.7	0.999	0.7	0.978	0.6	0.958	0.6	0.946	0.6	0.913	0.9
3005	1.000	1.1	0.986	1.7	0.976	0.6	0.961	0.5	0.918	0.5	0.895	0.7	0.910	0.5	0.897	0.8
3010	1.000	1.1	0.979	1.8	1.013	0.6	0.986	0.8	0.976	0.6	0.959	0.7	0.944	0.5	0.896	0.8
3015	1.000	0.8	0.988	1.7	0.994	0.8	0.985	0.7	0.962	0.6	0.927	0.5	0.934	0.5	0.924	1.0
3020	1.000	1.0	0.979	1.7	0.993	0.6	0.968	0.7	0.944	0.6	0.917	0.8	0.917	0.5	0.908	0.8
3025	1.000	0.9	0.992	1.7	0.999	0.6	0.977	0.8	0.957	0.5	0.949	0.9	0.934	0.6	0.907	0.9
3030	1.000	1.1	0.966	2.1	0.969	0.4	0.947	0.7	0.914	0.9	0.900	0.8	0.891	0.4	0.860	0.7
3035	1.000	1.2	1.002	1.7	0.998	0.9	0.963	0.7	0.946	0.8	0.925	0.8	0.936	0.7	0.899	0.9
3040	1.000	0.8	0.953	1.7	0.979	0.5	0.967	0.5	0.959	0.9	0.926	0.8	0.933	0.5	0.894	0.9
3045	1.000	1.2	0.956	1.7	0.962	0.7	0.953	0.7	0.971	0.7	0.944	0.5	0.929	0.4	0.897	0.7
3050	1.000	0.9	0.980	2.0	0.964	0.9	0.946	0.7	0.907	0.5	0.879	0.6	0.870	0.5	0.865	0.8
3055	1.000	1.1	0.948	2.1	1.017	0.4	0.981	0.8	0.969	0.5	0.956	0.4	0.940	0.7	0.888	1.0
3060	1.000	1.3	0.995	2.2	0.999	0.6	0.982	0.7	0.965	0.7	0.948	0.6	0.940	0.7	0.919	0.5
3065	1.000	0.9	0.961	1.7	0.990	0.7	0.958	0.9	0.944	0.8	0.925	0.8	0.924	0.4	0.902	0.7
3070	1.000	1.5	0.949	1.9	0.969	0.7	0.961	0.9	0.943	0.7	0.930	0.7	0.914	0.6	0.899	1.2
3075	1.000	1.2	0.992	2.2	0.992	0.9	0.970	0.7	0.971	0.7	0.952	0.6	0.940	0.6	0.921	0.6
3080	1.000	0.7	1.000	1.7	0.994	0.6	0.979	0.7	0.958	0.8	0.920	0.7	0.915	0.7	0.885	1.0
3085	1.000	1.2	0.954	1.7	0.977	0.8	0.959	0.6	0.948	0.9	0.923	0.5	0.909	0.5	0.897	1.0
3090	1.000	1.3	0.951	1.7	1.002	0.4	0.963	0.9	0.947	1.0	0.928	1.0	0.919	0.6	0.899	0.8
3095	1.000	1.8	0.991	1.7	0.971	0.9	0.972	1.0	0.982	0.7	0.967	0.6	0.959	0.4	0.922	0.7
3100	1.000	1.9	0.976	2.1	0.963	0.9	0.942	0.8	0.925	0.6	0.895	0.5	0.910	0.6	0.896	0.7
3105	1.000	1.8	0.989	1.7	1.005	0.8	0.978	1.0	0.930	0.7	0.927	0.5	0.908	0.7	0.890	0.8
3110	1.000	1.0	1.006	1.7	1.010	0.9	0.992	0.9	0.975	0.6	0.962	0.9	0.935	0.5	0.878	0.6
3115	1.000	1.3	1.039	2.2	1.026	0.8	0.997	1.1	0.954	0.8	0.949	0.9	0.949	0.8	0.915	1.1
3120	1.000	1.0	0.987	1.7	0.931	0.5	0.921	0.9	0.915	0.6	0.892	0.7	0.898	0.8	0.886	1.1
3125	1.000	1.8	0.959	3.2	0.980	0.9	0.975	1.3	0.965	0.9	0.936	1.0	0.916	0.7	0.882	0.9
3130	1.000	1.4	0.968	1.9	0.951	1.1	0.957	1.0	0.934	0.9	0.897	1.1	0.917	0.6	0.878	1.2
3135	1.000	0.3	0.986	1.7	0.997	1.0	0.974	0.6	0.967	0.8	0.932	0.8	0.929	0.9	0.895	1.3
3140	1.000	1.0	0.982	1.7	0.969	0.8	0.964	1.0	0.962	0.6	0.947	0.9	0.930	0.8	0.926	0.9
3145	1.000	1.2	0.966	2.0	1.001	1.3	0.983	1.2	0.946	0.7	0.932	1.0	0.925	0.7	0.924	1.2
3150	1.000	1.4	0.946	4.1	0.971	0.9	0.966	1.0	0.950	0.7	0.930	0.8	0.904	0.5	0.866	1.3
3155	1.000	1.3	0.984	2.3	0.958	1.1	0.949	0.7	0.920	1.0	0.910	1.3	0.908	0.7	0.884	1.2
3160	1.000	1.2	0.965	1.9	0.955	1.1	0.958	1.2	0.955	1.0	0.939	1.2	0.948	0.8	0.900	1.1
3165	1.000	1.6	1.026	2.3	1.003	1.0	1.010	1.1	0.991	0.9	0.957	1.2	0.948	1.0	0.915	0.9
3170	1.000	1.6	1.007	2.6	1.009	0.7	0.985	1.1	0.934	1.1	0.908	1.1	0.913	0.9	0.890	1.2
3175	1.000	1.2	0.986	3.0	0.997	1.0	1.025	1.5	1.033	0.9	0.992	1.1	0.978	1.2	0.920	1.2
3180	1.000	1.9	0.972	2.3	0.955	0.9	0.974	1.5	0.934	1.0	0.913	1.2	0.946	0.8	0.939	1.4
3185	1.000	1.2	0.956	2.1	0.970	1.3	0.968	1.0	0.933	0.9	0.904	1.6	0.935	0.8	0.904	1.1
3190	1.000	1.5	0.986	3.1	0.996	1.3	0.993	1.0	0.982	1.3	0.909	1.0	0.905	0.9	0.860	1.2
3195	1.000	1.1	0.942	3.7	0.953	1.3	0.931	1.3	0.940	1.3	0.884	1.4	0.898	1.0	0.868	1.0
3200	1.000	1.4	1.060	5.9	0.967	1.0	0.908	1.3	0.946	2.0	0.890	1.8	0.929	1.2	0.878	0.9
3205	1.000	1.3	1.118	6.2	1.013	0.7	1.008	1.5	0.939	1.7	0.886	1.7	0.869	1.4	0.868	1.3
3210	1.000	2.0	0.995	5.9	0.976	1.4	0.951	1.5	1.000	1.2	1.018	1.2	1.042	1.4	0.974	1.0
3215	1.000	3.6	0.973	2.1	1.052	1.4	0.988	1.3	0.950	1.7	0.920	1.9	0.946	1.6	0.920	2.2
3220	1.000	2.5	0.980	4.1	1.052	1.5	1.024	1.6	0.965	1.3	0.958	1.4	0.934	1.1	0.884	1.5

TABLE 2a - *Continued*

LWR SENSITIVITY CHANGES - TRAILED SPECTRA

λ (Å)	t=1978.97		t=1979.73		t=1981.06		t=1981.87		t=1982.97		t=1983.85		t=1984.98		t=1985.91	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
3225	1.000	4.5	1.057	1.7	1.155	1.0	1.122	1.6	1.037	1.4	0.952	1.3	0.926	1.1	0.846	1.5
3230	1.000	3.2	0.973	2.8	1.064	1.1	1.002	2.5	1.076	1.5	1.047	1.0	1.023	1.7	0.949	1.8
3235	1.000	3.0	0.931	4.5	0.838	1.9	0.823	3.1	0.978	1.5	0.936	1.5	0.932	1.7	0.968	2.0
3240	1.000	1.6	0.871	4.0	1.053	1.5	1.020	2.9	0.895	1.7	0.843	2.8	0.834	2.2	0.839	1.9
3245	1.000	2.9	0.872	6.6	0.955	2.3	0.992	2.1	1.017	1.8	0.997	2.0	1.017	1.8	0.953	1.3
3250	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3255	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3260	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3265	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3270	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3275	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3280	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3285	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3290	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3295	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3300	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3305	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3310	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3315	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3320	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3325	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3330	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3335	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3340	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3345	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...
3350	1.000	...	0.980	...	0.955	...	0.980	...	0.969	...	0.935	...	0.937	...	0.901	...

TABLE 2b

LWR SENSITIVITY CHANGES - SMALL APERTURE

λ (Å)	t=1978.88		t=1979.85		t=1980.81		t=1981.81		t=1982.82		t=1983.70		t=1984.90		t=1985.92	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
1850	1.000	3.1	0.927	2.9	1.000	3.8	0.988	2.8	1.017	3.0	0.985	2.0	0.960	4.9	0.928	6.8
1855	1.000	3.1	1.210	1.9	1.147	2.6	1.157	3.5	1.111	2.5	1.144	2.7	1.108	2.6	1.047	2.5
1860	1.000	3.3	1.162	1.9	1.207	2.2	1.216	2.3	1.128	3.4	1.155	2.9	1.078	3.5	0.921	2.0
1865	1.000	2.1	1.006	1.6	0.935	1.9	1.023	2.2	1.025	1.9	1.054	2.6	1.055	2.7	1.054	2.2
1870	1.000	2.0	1.031	1.9	1.014	2.2	1.139	1.8	1.156	2.3	1.056	3.1	1.105	2.4	1.104	2.2
1875	1.000	2.0	1.136	1.8	1.150	1.3	1.189	1.2	1.189	1.9	1.161	2.5	0.963	2.0	1.026	3.5
1880	1.000	1.4	1.032	1.5	1.038	1.8	1.056	1.6	1.091	1.9	1.028	2.4	1.010	2.4	1.085	2.3
1885	1.000	1.5	0.981	1.4	1.008	1.5	1.046	1.7	1.086	1.7	1.021	2.2	0.960	2.0	1.008	2.4
1890	1.000	1.5	0.912	1.7	0.889	3.1	1.061	2.0	1.047	2.2	0.989	2.5	1.139	1.9	1.175	3.9
1895	1.000	1.7	1.053	1.2	1.118	1.4	1.105	1.9	1.148	1.8	1.057	2.3	1.078	2.0	1.052	2.4
1900	1.000	1.3	0.944	1.9	0.860	3.0	1.008	1.7	0.985	1.7	0.961	2.4	0.976	2.1	0.992	3.0
1905	1.000	1.2	1.005	1.2	1.042	1.8	1.100	1.2	1.097	1.8	1.119	2.3	1.121	2.1	1.127	2.0
1910	1.000	1.2	1.087	1.4	1.059	1.1	1.066	1.1	1.101	1.3	1.044	2.2	1.008	2.1	1.089	2.5
1915	1.000	1.3	1.113	1.3	1.145	1.6	1.107	0.9	1.155	1.9	1.151	2.2	1.055	2.2	1.132	2.6
1920	1.000	1.1	1.016	1.1	0.984	1.8	1.092	1.2	1.127	1.4	1.131	2.1	1.041	2.2	1.034	2.3
1925	1.000	0.8	1.012	1.1	1.016	1.2	1.031	1.3	1.004	1.4	1.011	2.0	0.983	2.1	0.952	2.2
1930	1.000	1.1	0.872	1.3	0.889	2.1	0.939	1.6	0.989	2.0	0.966	2.2	1.003	1.8	0.958	2.3
1935	1.000	0.9	0.997	1.4	1.020	1.1	1.073	1.0	1.057	1.7	1.036	2.2	1.078	2.1	1.155	2.2
1940	1.000	1.0	1.079	1.0	1.110	1.1	1.134	1.1	1.170	1.5	1.142	2.1	1.122	1.8	1.134	2.0
1945	1.000	1.1	1.060	1.1	1.059	0.9	1.090	1.2	1.091	1.2	1.091	2.4	1.080	1.7	1.127	2.0
1950	1.000	0.9	0.973	1.0	0.984	1.0	1.025	1.1	0.992	1.4	1.005	2.0	0.992	1.8	1.047	2.0
1955	1.000	0.8	0.987	1.0	1.017	1.1	1.053	1.0	1.050	1.6	1.045	2.0	1.064	1.7	1.054	2.0
1960	1.000	0.9	1.030	0.9	1.029	1.1	1.071	1.0	1.067	1.3	1.055	2.5	1.066	1.7	1.048	2.1
1965	1.000	0.7	1.045	0.9	1.074	1.1	1.086	1.3	1.107	1.4	1.097	2.2	1.102	2.1	1.068	2.3
1970	1.000	0.8	1.046	1.0	1.025	1.1	1.071	0.7	1.081	1.6	1.041	2.0	1.060	1.8	1.006	2.1
1975	1.000	0.8	1.021	0.9	1.035	0.8	1.046	1.1	1.025	1.5	1.014	2.2	0.985	1.8	0.943	2.0
1980	1.000	0.9	1.041	0.7	1.097	0.7	1.096	0.9	1.109	1.3	1.119	2.0	1.103	1.7	1.103	2.0
1985	1.000	0.6	1.104	0.8	1.072	0.8	1.088	1.0	1.096	1.2	1.105	2.0	1.094	1.7	1.098	2.0
1990	1.000	1.0	1.013	0.7	0.976	1.4	1.020	0.5	1.015	1.5	1.004	2.3	1.033	1.7	1.051	2.3
1995	1.000	0.9	0.976	0.9	0.928	0.3	0.988	0.6	0.993	1.4	0.983	2.0	0.991	1.8	0.980	2.0
2000	1.000	0.8	1.013	0.6	0.996	0.7	1.050	0.9	1.012	1.3	1.006	2.0	0.985	1.7	0.994	2.0
2005	1.000	0.7	1.008	0.7	1.012	0.8	1.039	0.7	1.083	1.3	1.074	2.2	1.101	1.7	1.087	2.5
2010	1.000	0.8	1.001	0.9	0.996	0.9	1.014	1.0	1.003	1.0	0.998	2.2	1.012	1.8	1.017	2.0
2015	1.000	1.0	0.996	0.9	0.993	0.8	1.032	1.1	1.008	1.3	1.015	2.1	0.987	1.7	0.998	2.2
2020	1.000	0.8	1.027	0.7	1.035	0.9	1.065	0.8	1.085	1.3	1.080	2.2	1.049	1.7	1.035	2.2
2025	1.000	0.8	1.012	0.7	1.001	1.1	1.034	0.8	1.079	1.4	1.051	2.1	1.049	1.7	1.043	2.2
2030	1.000	0.8	1.027	0.8	1.056	0.9	1.052	0.9	1.069	1.5	1.082	2.2	1.058	1.8	1.102	2.0
2035	1.000	0.7	1.000	0.7	1.001	0.8	1.043	0.9	1.060	1.3	1.058	2.2	1.031	1.7	1.048	2.0
2040	1.000	0.9	1.034	0.7	1.036	0.9	1.050	0.9	1.085	1.4	1.071	2.0	1.041	2.0	1.062	2.0
2045	1.000	0.9	1.034	0.8	1.057	1.0	1.060	1.0	1.075	1.3	1.060	2.0	1.041	1.7	1.072	2.2
2050	1.000	0.7	1.066	0.9	1.066	0.8	1.080	0.8	1.099	1.3	1.117	2.0	1.072	1.7	1.107	2.0
2055	1.000	0.8	1.049	0.9	1.074	0.9	1.069	0.9	1.108	0.9	1.086	2.1	1.103	1.7	1.101	2.0
2060	1.000	0.8	1.046	0.9	1.043	1.1	1.050	1.0	1.043	1.4	1.031	2.1	1.070	1.7	1.048	2.0
2065	1.000	0.9	1.024	0.9	1.024	1.0	1.037	1.0	1.037	1.1	0.991	2.2	1.031	2.0	1.041	2.0
2070	1.000	0.8	1.031	1.1	1.020	1.0	1.054	0.9	1.061	1.5	1.048	2.1	1.035	1.7	1.036	2.0
2075	1.000	0.8	1.082	0.8	1.082	0.7	1.083	0.8	1.069	1.3	1.064	2.0	1.061	1.7	1.048	2.0
2080	1.000	0.8	1.040	0.6	1.032	0.9	1.014	1.4	1.053	1.0	1.022	2.0	1.017	1.8	1.030	2.0
2085	1.000	0.9	1.056	0.8	1.045	1.0	1.031	0.9	1.058	0.9	1.038	2.2	1.058	1.7	1.066	2.1
2090	1.000	0.7	1.050	0.6	1.021	0.7	1.020	0.7	1.017	1.3	1.007	2.0	0.979	1.8	0.993	2.0
2095	1.000	0.8	1.090	0.8	1.089	1.0	1.107	0.9	1.092	1.3	1.091	2.2	1.107	1.7	1.153	2.2
2100	1.000	0.8	1.069	0.7	1.076	0.7	1.108	1.1	1.076	1.3	1.066	2.0	1.057	1.7	1.034	2.0
2105	1.000	0.9	1.035	0.8	1.021	1.0	1.045	0.9	1.034	1.4	1.024	2.0	1.023	1.8	1.020	2.2
2110	1.000	0.9	0.987	0.8	0.986	0.8	0.983	0.8	1.013	1.3	0.997	2.0	1.014	1.7	1.029	2.0
2115	1.000	0.8	1.023	0.9	1.049	1.0	1.041	0.9	1.055	1.2	1.091	2.2	1.110	1.7	1.070	2.0
2120	1.000	0.8	1.087	0.8	1.079	0.9	1.057	0.8	1.079	1.3	1.062	2.1	1.022	1.8	1.053	2.0

TABLE 2b - *Continued*

LWR SENSITIVITY CHANGES - SMALL APERTURE

λ (Å)	t=1978.88		t=1979.85		t=1980.81		t=1981.81		t=1982.82		t=1983.70		t=1984.90		t=1985.92	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
2125	1.000	0.8	1.064	0.8	1.050	0.8	1.025	0.9	1.044	1.2	1.047	2.0	1.026	1.7	1.030	2.0
2130	1.000	1.0	1.052	1.0	1.118	1.0	1.093	0.9	1.128	1.0	1.155	2.0	1.142	1.7	1.123	2.0
2135	1.000	0.9	1.107	0.9	1.117	1.0	1.096	1.2	1.120	1.2	1.127	2.2	1.114	1.8	1.118	2.3
2140	1.000	0.9	1.086	0.8	1.063	0.8	1.064	1.0	1.086	1.5	1.108	2.0	1.084	1.8	1.076	2.1
2145	1.000	0.8	1.102	0.8	1.088	1.2	1.036	1.3	1.035	1.4	1.022	2.2	0.952	1.7	0.975	2.0
2150	1.000	0.6	1.042	0.7	1.043	0.8	1.037	1.1	1.058	1.1	1.052	2.2	1.030	1.7	1.045	2.0
2155	1.000	0.7	1.040	0.5	1.041	0.8	1.048	0.8	1.052	1.4	1.046	2.2	1.012	1.8	1.021	2.0
2160	1.000	0.6	1.050	0.5	1.027	0.8	1.028	0.7	1.065	1.0	1.052	2.0	1.041	1.7	1.078	2.1
2165	1.000	0.5	1.057	0.5	1.035	0.8	1.027	0.8	1.070	0.9	1.041	2.1	1.021	1.7	1.047	2.0
2170	1.000	0.6	1.060	0.5	0.995	0.9	1.028	0.9	1.037	1.3	1.018	2.2	1.018	1.7	1.057	2.0
2175	1.000	0.8	1.070	0.6	1.049	0.8	1.054	1.0	1.049	1.1	0.984	2.3	0.996	2.0	0.982	2.2
2180	1.000	0.8	1.004	0.6	0.977	1.2	0.982	0.7	1.007	1.0	0.990	2.0	0.985	1.7	0.949	2.1
2185	1.000	0.8	1.001	0.7	0.949	1.2	0.948	1.2	0.955	1.4	0.942	2.1	0.955	1.7	0.939	2.0
2190	1.000	0.8	0.987	0.9	0.955	1.1	0.964	1.2	1.009	1.6	0.998	2.0	0.999	1.7	0.949	2.0
2195	1.000	1.1	1.062	1.1	1.064	1.0	1.027	1.2	1.030	1.5	1.015	2.0	1.000	1.8	1.023	2.0
2200	1.000	0.9	1.000	0.6	0.971	1.2	0.983	0.9	0.998	1.4	0.991	2.0	0.944	1.8	0.928	2.0
2205	1.000	0.9	1.006	0.9	1.016	1.1	1.026	1.0	1.030	1.4	1.003	2.1	0.991	1.9	1.029	2.3
2210	1.000	0.9	0.990	0.9	0.958	1.0	0.959	0.9	1.001	1.6	0.991	2.0	0.968	1.9	0.965	2.3
2215	1.000	0.8	0.942	1.0	0.935	0.9	0.973	0.8	0.997	1.5	0.984	2.0	0.990	1.7	0.966	2.1
2220	1.000	0.8	1.035	0.9	1.017	0.8	0.996	1.1	0.963	1.3	0.977	2.0	0.966	1.9	0.962	2.0
2225	1.000	0.9	0.978	0.9	0.968	1.1	0.946	1.1	0.955	1.1	0.988	2.0	0.909	1.7	0.932	2.3
2230	1.000	0.7	0.978	1.0	0.954	1.1	0.956	1.4	0.997	1.6	1.013	2.0	1.071	1.7	1.068	2.1
2235	1.000	0.8	1.011	0.7	0.991	0.8	1.017	0.9	1.013	1.4	1.026	2.0	1.016	1.7	0.996	2.0
2240	1.000	0.8	1.092	0.7	1.131	0.9	1.101	1.0	1.106	1.4	1.086	2.4	1.110	1.8	1.096	2.0
2245	1.000	0.7	1.032	0.8	1.010	1.1	1.000	1.3	1.032	1.5	0.982	2.0	0.996	1.7	1.028	2.0
2250	1.000	0.8	1.065	0.8	1.064	1.1	1.010	1.2	1.040	1.2	1.018	2.0	0.998	1.8	1.049	2.1
2255	1.000	0.8	1.040	0.8	1.014	0.7	0.994	0.8	0.980	1.4	0.970	2.1	0.956	1.9	0.969	2.0
2260	1.000	0.8	0.971	1.0	0.933	0.8	0.915	1.3	0.863	1.2	0.842	2.2	0.845	1.8	0.859	2.2
2265	1.000	0.8	0.908	0.5	0.908	1.1	0.926	0.9	0.932	1.1	0.953	2.1	0.943	1.7	0.917	2.0
2270	1.000	0.8	0.986	0.9	0.988	0.9	0.999	1.4	0.985	1.6	1.018	2.0	1.010	1.7	1.036	2.0
2275	1.000	0.8	1.010	0.7	0.987	0.9	0.968	1.0	0.918	1.4	0.933	2.0	0.924	1.7	0.934	2.0
2280	1.000	1.1	0.972	1.2	1.024	1.0	1.042	1.2	1.087	1.3	1.072	2.0	1.024	1.8	0.999	2.2
2285	1.000	0.7	0.946	0.9	0.967	1.0	0.988	1.3	0.968	1.4	0.965	2.1	1.031	1.7	1.049	2.0
2290	1.000	0.8	0.951	0.7	0.967	0.7	1.005	0.9	1.049	1.5	1.067	2.0	1.083	1.7	1.069	2.0
2295	1.000	1.0	1.093	0.8	1.066	0.9	1.012	1.0	1.016	1.2	1.017	2.0	1.026	1.9	1.012	2.0
2300	1.000	0.8	0.986	0.9	0.980	0.9	0.993	1.1	1.026	1.3	1.039	2.0	1.081	1.8	1.048	2.2
2305	1.000	0.6	1.032	0.4	1.076	1.1	1.032	1.0	1.049	1.3	1.038	2.0	1.040	1.9	1.054	2.0
2310	1.000	0.8	0.964	1.0	0.947	1.2	0.949	1.1	0.944	1.3	0.944	2.0	0.928	1.8	0.912	2.0
2315	1.000	1.0	0.971	0.7	0.986	1.1	1.007	1.1	0.998	1.4	1.002	2.1	0.986	1.7	1.005	2.2
2320	1.000	0.9	0.980	0.9	0.998	0.8	1.028	0.8	1.020	1.3	1.021	2.2	1.034	1.7	1.013	2.0
2325	1.000	0.9	0.987	0.7	0.965	1.1	0.942	1.0	0.963	0.8	0.939	2.0	0.963	1.7	0.945	2.0
2330	1.000	0.8	1.004	0.8	0.962	1.1	0.956	1.4	0.906	1.2	0.957	2.1	0.978	1.7	0.970	2.0
2335	1.000	0.8	0.993	0.7	1.032	0.9	1.016	0.9	1.032	1.2	1.059	2.1	1.005	1.7	0.991	2.0
2340	1.000	0.7	0.989	0.5	0.977	0.8	1.023	0.9	1.001	1.2	0.989	2.0	0.991	1.7	1.041	2.2
2345	1.000	0.7	0.991	0.7	0.988	1.1	1.018	0.8	1.008	0.9	0.980	2.0	0.973	1.7	0.979	2.0
2350	1.000	0.8	0.989	0.8	0.985	1.0	1.040	0.7	1.046	0.8	1.049	2.1	1.092	1.7	1.052	2.1
2355	1.000	0.6	1.028	0.7	1.040	0.6	1.043	0.8	1.009	1.2	1.020	2.0	1.010	1.7	1.032	2.0
2360	1.000	0.6	1.022	0.7	1.012	0.9	0.997	1.2	1.022	1.3	1.022	2.1	1.008	1.7	1.000	2.0
2365	1.000	0.8	1.063	0.9	1.063	1.0	1.062	1.0	1.036	1.3	0.990	2.0	1.040	1.7	1.034	2.3
2370	1.000	0.7	1.082	0.7	1.076	0.6	1.056	1.1	1.062	1.1	1.066	2.0	1.034	1.7	1.030	2.0
2375	1.000	0.6	1.035	0.7	1.025	0.7	1.008	0.7	1.026	0.9	1.043	2.0	1.035	1.7	1.035	2.0
2380	1.000	0.6	1.061	0.9	1.023	0.8	1.005	0.8	0.989	1.2	0.980	2.1	0.997	1.7	1.008	2.1
2385	1.000	0.8	1.046	0.8	1.048	0.9	1.082	0.7	1.090	1.1	1.075	2.1	1.022	1.7	1.004	2.2
2390	1.000	0.7	1.035	0.6	1.053	0.8	1.063	1.0	1.024	1.1	1.001	2.1	1.017	1.7	1.030	2.0
2395	1.000	0.6	1.005	1.0	1.014	0.9	1.021	0.9	1.042	1.3	1.030	2.1	1.012	1.8	1.007	2.0

TABLE 2b - *Continued*

LWR SENSITIVITY CHANGES - SMALL APERTURE

λ (Å)	t=1978.88 f(t)	σ(%)	t=1979.85 f(t)	σ(%)	t=1980.81 f(t)	σ(%)	t=1981.81 f(t)	σ(%)	t=1982.82 f(t)	σ(%)	t=1983.70 f(t)	σ(%)	t=1984.90 f(t)	σ(%)	t=1985.92 f(t)	σ(%)
2400	1.000	0.6	1.026	0.8	1.036	0.5	1.039	0.8	1.041	1.4	1.034	2.1	1.039	1.7	1.048	2.1
2405	1.000	0.6	1.013	0.6	1.048	0.7	1.073	0.6	1.075	1.1	1.048	2.1	1.026	1.7	1.033	2.0
2410	1.000	0.8	1.001	1.0	1.034	1.1	1.048	0.9	1.055	1.0	1.068	2.2	1.083	1.7	1.079	2.1
2415	1.000	0.7	0.983	1.1	0.963	0.8	0.968	1.0	0.977	0.9	0.963	2.1	0.942	1.7	0.979	2.0
2420	1.000	0.8	0.975	0.8	0.981	0.8	0.995	1.0	1.029	1.3	1.033	2.3	1.086	1.7	1.088	2.0
2425	1.000	0.9	1.057	0.6	1.063	1.3	1.026	1.2	0.978	1.4	0.961	2.2	0.950	1.7	0.977	2.0
2430	1.000	0.7	1.046	0.9	1.031	1.0	1.027	1.1	1.021	1.2	0.991	2.3	0.967	1.7	0.964	2.1
2435	1.000	0.7	1.022	0.5	1.028	1.1	0.992	1.4	0.988	1.1	0.968	2.2	0.957	1.7	0.944	2.0
2440	1.000	0.8	1.016	1.2	0.979	0.6	0.970	0.8	0.983	1.3	0.978	2.1	0.995	1.7	0.975	2.0
2445	1.000	0.9	0.943	0.8	0.951	0.7	0.981	1.1	0.944	0.9	0.934	2.1	0.950	1.7	0.918	2.0
2450	1.000	0.6	0.940	0.6	0.958	1.0	1.001	0.9	1.024	1.5	1.018	2.2	1.075	1.7	1.067	2.1
2455	1.000	0.8	0.969	0.7	0.996	0.8	1.034	0.7	1.032	1.0	1.029	2.1	1.034	1.7	1.072	2.0
2460	1.000	0.7	1.025	0.7	1.058	0.9	1.038	1.6	1.030	1.1	1.031	2.1	1.048	1.8	1.051	2.0
2465	1.000	0.7	1.085	0.7	1.066	0.8	1.050	1.4	1.054	1.2	1.025	2.1	0.997	1.7	1.057	2.0
2470	1.000	0.7	1.011	0.7	0.939	1.3	0.996	0.7	0.981	1.3	0.969	2.0	0.967	1.7	0.967	2.0
2475	1.000	0.7	0.985	0.7	0.997	0.6	1.009	0.8	1.001	1.3	0.989	2.0	0.976	1.7	0.951	2.0
2480	1.000	0.6	1.013	0.7	1.023	0.7	1.042	1.1	1.037	0.9	1.029	2.0	1.024	1.7	1.020	2.0
2485	1.000	0.6	0.960	0.7	0.957	1.0	0.998	1.0	1.022	1.0	1.000	2.3	0.947	1.7	0.962	2.0
2490	1.000	0.5	0.959	0.9	0.967	0.8	1.020	1.1	1.018	1.1	1.010	2.2	1.035	1.7	1.052	2.0
2495	1.000	0.6	1.030	0.9	1.062	0.9	1.067	0.9	1.095	0.9	1.023	2.1	1.053	1.7	1.036	2.0
2500	1.000	0.7	1.098	0.8	1.049	0.7	1.023	1.0	1.019	0.9	1.006	2.2	1.011	1.7	0.998	2.0
2505	1.000	0.7	1.104	0.9	1.075	0.6	1.036	1.3	1.045	1.1	1.037	2.2	0.998	1.7	1.014	2.0
2510	1.000	0.6	1.036	0.8	1.005	1.1	1.023	1.2	1.024	1.0	1.027	2.2	0.997	1.7	1.033	2.0
2515	1.000	0.6	0.995	1.0	1.006	0.8	1.042	1.2	0.992	0.9	1.020	2.3	1.009	1.8	1.020	2.1
2520	1.000	0.6	1.001	0.8	1.009	0.6	1.048	0.8	1.015	1.3	1.038	2.7	1.051	1.7	1.078	2.0
2525	1.000	0.6	1.014	0.7	1.013	0.5	1.037	0.8	1.045	0.9	1.072	2.3	1.100	1.7	1.073	2.0
2530	1.000	0.6	1.029	0.9	0.997	0.7	0.991	1.2	0.949	0.7	0.934	2.2	0.940	1.7	0.962	2.2
2535	1.000	0.7	1.000	0.8	1.031	0.9	1.036	0.8	1.060	1.1	1.050	2.2	1.075	1.7	1.085	2.0
2540	1.000	0.7	1.010	0.7	0.986	0.8	1.028	0.9	1.014	1.3	1.006	2.2	1.052	1.7	1.053	2.0
2545	1.000	0.8	1.026	0.8	1.036	0.5	1.047	0.7	1.048	1.4	1.074	2.2	1.100	1.7	1.134	2.0
2550	1.000	0.7	1.012	0.6	1.031	0.7	1.036	0.7	1.019	0.8	1.057	2.2	1.050	1.7	1.093	2.0
2555	1.000	0.7	1.039	0.8	1.055	0.6	1.074	0.7	1.079	1.4	1.055	2.2	1.072	1.7	1.091	2.0
2560	1.000	0.6	1.037	0.7	1.084	0.9	1.115	0.9	1.149	0.9	1.151	2.2	1.140	1.7	1.152	2.0
2565	1.000	0.6	0.985	0.5	1.001	1.0	1.060	0.8	1.060	1.3	1.037	2.2	1.075	1.7	1.075	2.0
2570	1.000	0.5	1.020	0.5	1.023	1.2	1.089	1.2	1.138	1.4	1.100	2.3	1.066	1.7	1.071	2.0
2575	1.000	0.6	1.024	0.8	1.038	0.8	1.067	1.2	1.102	1.3	1.060	2.0	1.047	1.7	1.047	2.0
2580	1.000	0.5	1.039	0.9	1.019	0.7	1.039	1.2	1.036	1.4	1.015	2.0	1.056	1.7	1.066	2.1
2585	1.000	0.6	1.032	0.8	1.043	0.5	1.056	1.1	1.064	1.4	1.050	2.2	1.044	1.8	1.053	2.0
2590	1.000	0.9	1.016	0.6	1.034	0.7	1.083	0.9	1.110	1.3	1.106	2.0	1.109	1.7	1.148	2.0
2595	1.000	0.6	1.020	0.9	1.069	1.0	1.120	1.1	1.151	1.3	1.155	2.1	1.171	1.7	1.172	2.0
2600	1.000	0.7	1.033	1.0	1.050	0.7	1.054	0.8	1.058	0.7	1.042	2.0	1.040	1.8	1.070	2.3
2605	1.000	0.3	1.025	0.8	1.053	1.0	1.081	1.2	1.094	1.3	1.087	2.1	1.089	1.7	1.103	2.0
2610	1.000	0.6	1.060	0.9	1.055	1.2	1.092	1.0	1.051	1.2	1.020	2.3	1.048	1.8	1.111	2.0
2615	1.000	0.5	1.052	0.7	1.044	1.1	1.086	0.8	1.095	1.0	1.056	2.0	1.002	1.7	1.018	2.0
2620	1.000	0.7	1.061	0.7	1.083	0.7	1.097	1.3	1.124	4.7	1.129	3.4	1.093	1.7	1.121	2.1
2625	1.000	0.5	1.030	0.6	1.069	0.8	1.112	0.9	1.144	1.5	1.092	2.1	1.087	1.7	1.107	2.1
2630	1.000	0.5	1.030	1.0	1.036	0.9	1.093	1.0	1.078	1.2	1.097	2.0	1.107	1.7	1.116	2.0
2635	1.000	0.7	1.039	1.1	1.086	0.9	1.094	1.3	1.123	1.2	1.101	2.1	1.063	1.7	1.086	2.0
2640	1.000	0.6	1.046	0.7	1.067	0.9	1.088	0.5	1.112	1.2	1.106	2.0	1.110	1.7	1.098	2.0
2645	1.000	0.7	1.023	0.8	1.020	0.7	1.048	1.3	1.070	1.2	1.044	2.0	1.064	1.7	1.071	2.0
2650	1.000	0.6	1.024	0.8	1.012	0.9	1.039	1.1	1.058	1.0	1.039	2.0	1.067	1.7	1.058	2.1
2655	1.000	0.8	1.021	0.9	1.015	0.9	1.005	1.4	1.000	1.4	0.970	2.0	0.950	1.7	0.962	2.0
2660	1.000	0.7	1.044	0.8	1.059	0.6	1.047	0.8	1.081	1.5	1.031	2.0	0.999	1.7	1.007	2.0
2665	1.000	0.8	1.022	1.1	1.023	1.0	1.044	1.2	1.038	1.2	1.035	2.0	1.018	1.7	1.018	2.1
2670	1.000	0.9	0.971	1.1	0.997	1.1	1.029	1.4	1.063	1.4	1.090	2.0	1.037	1.7	1.031	2.0

TABLE 2b - *Continued*

LWR SENSITIVITY CHANGES - SMALL APERTURE

λ (Å)	t=1978.88 f(t)	σ(%)	t=1979.85 f(t)	σ(%)	t=1980.81 f(t)	σ(%)	t=1981.81 f(t)	σ(%)	t=1982.82 f(t)	σ(%)	t=1983.70 f(t)	σ(%)	t=1984.90 f(t)	σ(%)	t=1985.92 f(t)	σ(%)
2675	1.000	0.7	1.026	0.7	1.029	0.9	1.080	1.1	1.072	1.1	1.068	2.0	1.119	1.7	1.143	2.0
2680	1.000	0.6	1.062	0.9	1.041	1.4	1.098	1.1	1.075	1.1	1.021	2.0	1.054	1.7	1.049	2.1
2685	1.000	0.7	0.998	0.7	0.981	0.8	1.034	0.8	1.031	1.5	0.997	2.2	1.023	1.7	1.045	2.0
2690	1.000	0.7	1.024	0.6	1.027	1.1	1.067	0.8	1.090	1.4	1.082	2.2	1.045	1.8	1.053	2.1
2695	1.000	0.9	1.037	0.6	1.057	0.9	1.079	1.0	1.084	1.3	1.093	2.0	1.092	1.7	1.099	2.0
2700	1.000	0.9	1.032	0.6	1.066	1.1	1.116	1.1	1.109	1.4	1.125	2.0	1.077	1.8	1.088	2.1
2705	1.000	0.6	1.024	0.8	1.106	1.4	1.135	1.3	1.160	1.3	1.199	2.1	1.177	1.8	1.190	2.2
2710	1.000	0.7	1.055	0.8	1.046	0.9	1.034	1.2	1.033	1.1	1.034	2.1	0.999	1.7	1.052	2.0
2715	1.000	0.5	1.059	0.7	1.067	1.0	1.071	1.6	1.068	1.5	1.045	2.1	1.046	1.7	1.007	2.0
2720	1.000	0.6	1.024	0.7	1.034	1.1	1.105	1.4	1.120	1.5	1.127	2.3	1.154	1.8	1.164	2.1
2725	1.000	0.7	1.058	0.8	1.052	0.9	1.081	0.7	1.123	1.5	1.084	2.2	1.046	2.0	1.057	2.0
2730	1.000	0.5	1.035	0.7	1.009	0.5	1.114	1.4	1.134	1.7	1.144	2.2	1.138	2.1	1.107	2.0
2735	1.000	0.7	1.027	0.8	1.010	0.9	1.054	1.4	1.039	1.3	1.012	2.0	1.013	2.0	1.029	2.1
2740	1.000	0.6	1.008	0.9	1.024	0.6	1.055	1.2	1.031	1.5	0.993	2.0	1.015	1.7	1.049	2.0
2745	1.000	0.7	1.078	0.8	1.110	0.8	1.127	1.2	1.143	1.1	1.167	2.3	1.174	1.7	1.196	2.2
2750	1.000	0.6	1.050	1.0	1.050	1.1	1.077	1.2	1.159	1.0	1.131	2.1	1.108	1.8	1.118	2.2
2755	1.000	0.7	1.040	0.8	1.015	0.8	1.055	1.0	1.090	1.4	1.048	2.2	1.051	1.7	1.096	2.2
2760	1.000	0.6	1.037	0.8	1.057	1.3	1.142	1.2	1.176	1.3	1.147	3.1	1.196	1.7	1.167	2.2
2765	1.000	0.7	1.032	0.9	1.080	0.9	1.129	0.9	1.128	1.5	1.098	2.8	1.156	1.8	1.179	2.2
2770	1.000	0.7	1.020	0.7	1.022	0.7	1.066	1.0	1.095	1.1	1.057	2.4	1.040	1.7	1.013	2.2
2775	1.000	0.6	1.022	0.7	1.001	0.7	1.030	0.9	1.066	0.5	1.026	2.4	1.068	1.8	1.088	2.3
2780	1.000	0.6	1.052	0.6	1.071	0.6	1.068	1.2	1.108	1.0	1.102	2.4	1.057	2.0	1.008	2.2
2785	1.000	0.6	1.091	0.8	1.069	0.9	1.067	1.1	1.096	1.3	1.080	2.4	1.076	1.8	1.118	2.3
2790	1.000	0.8	1.045	0.6	1.042	0.9	1.051	1.1	1.066	1.2	1.063	2.4	1.052	1.8	1.056	2.1
2795	1.000	0.7	0.985	0.7	0.981	0.8	1.011	1.0	1.027	1.2	1.044	2.4	1.015	1.8	1.083	2.1
2800	1.000	0.6	1.028	0.7	1.036	0.7	1.058	0.9	1.047	1.0	1.034	2.4	1.023	1.7	1.012	2.1
2805	1.000	0.6	1.043	0.9	1.052	1.0	1.088	1.2	1.125	1.3	1.088	2.4	1.003	1.7	1.002	2.3
2810	1.000	0.6	1.024	0.6	1.066	0.8	1.082	0.8	1.120	1.3	1.121	2.4	1.125	1.7	1.148	2.1
2815	1.000	0.8	1.030	0.9	1.027	0.7	1.041	1.3	1.058	1.4	1.036	2.4	1.015	1.7	1.010	2.1
2820	1.000	0.8	1.029	0.9	1.043	1.0	1.064	0.8	1.056	1.6	1.065	2.4	1.076	1.8	1.169	2.2
2825	1.000	0.7	1.036	0.9	1.070	0.8	1.120	0.7	1.118	1.4	1.122	2.2	1.077	1.7	1.114	2.1
2830	1.000	0.8	1.062	1.2	1.096	1.2	1.078	1.3	1.145	1.2	1.141	2.4	1.055	1.7	1.027	2.1
2835	1.000	0.7	1.058	0.7	1.058	1.1	1.088	0.7	1.127	1.4	1.091	2.2	1.094	1.7	1.122	2.0
2840	1.000	0.8	1.012	0.8	1.032	0.9	1.080	0.8	1.106	1.5	1.092	2.2	1.102	1.7	1.102	2.0
2845	1.000	0.7	1.030	0.7	1.068	0.9	1.088	0.7	1.114	1.3	1.122	2.2	1.118	1.8	1.143	2.0
2850	1.000	0.8	1.015	0.8	1.021	0.9	1.057	0.8	1.053	1.3	1.077	2.1	1.025	1.8	1.028	2.0
2855	1.000	0.8	1.007	0.8	1.037	1.0	1.055	1.2	1.076	1.1	1.096	2.1	1.086	1.7	1.117	2.0
2860	1.000	0.7	1.049	0.9	1.056	0.6	1.056	0.9	1.091	1.5	1.099	2.0	1.061	1.7	1.068	2.0
2865	1.000	0.6	1.074	1.0	1.096	0.7	1.132	1.0	1.159	1.5	1.165	2.1	1.086	1.7	1.078	2.0
2870	1.000	0.6	1.079	0.9	1.078	0.6	1.104	0.9	1.157	1.5	1.148	2.1	1.146	1.7	1.146	2.2
2875	1.000	0.7	1.081	0.8	1.092	0.8	1.104	1.0	1.153	1.5	1.163	2.1	1.109	1.9	1.101	2.2
2880	1.000	0.8	1.048	0.8	1.051	0.8	1.081	1.0	1.105	1.6	1.119	2.1	1.169	1.9	1.143	2.0
2885	1.000	0.6	1.061	0.6	1.071	1.0	1.120	0.9	1.159	1.5	1.153	2.1	1.166	1.7	1.182	2.0
2890	1.000	0.5	1.064	0.8	1.072	1.1	1.114	1.0	1.143	1.5	1.135	2.1	1.127	1.8	1.137	2.0
2895	1.000	0.5	1.057	0.8	1.064	1.0	1.091	1.0	1.145	1.5	1.134	2.1	1.104	1.8	1.123	2.0
2900	1.000	0.5	1.058	0.8	1.048	0.8	1.072	0.9	1.099	1.5	1.093	2.2	1.061	1.8	1.106	2.0
2905	1.000	0.6	1.021	0.7	1.021	0.7	1.062	1.1	1.072	1.5	1.080	2.2	1.081	1.8	1.095	2.0
2910	1.000	0.7	1.045	0.6	1.060	0.9	1.093	1.0	1.095	1.6	1.121	2.3	1.072	1.8	1.081	2.0
2915	1.000	0.7	1.063	1.1	1.065	1.0	1.062	0.9	1.106	1.6	1.104	2.2	1.077	1.8	1.075	2.1
2920	1.000	0.7	1.066	0.9	1.056	0.8	1.069	1.5	1.113	1.3	1.059	2.3	1.095	1.8	1.080	2.2
2925	1.000	0.6	1.040	0.9	1.018	0.8	1.046	0.8	1.088	1.1	1.093	2.2	1.146	1.9	1.111	2.1
2930	1.000	0.6	1.048	1.0	1.037	0.8	1.037	1.1	1.037	1.1	1.049	2.1	1.022	1.8	1.037	2.1
2935	1.000	0.7	1.052	1.1	1.057	0.6	1.045	1.1	1.084	1.2	1.072	2.2	1.048	2.0	1.067	2.1
2940	1.000	0.8	1.041	0.8	1.027	0.5	1.017	1.4	1.069	1.1	1.044	2.1	1.070	2.0	1.090	2.4
2945	1.000	0.7	1.018	0.8	1.000	0.9	1.026	0.9	1.031	1.5	1.007	2.2	1.041	1.8	1.027	2.1

TABLE 2b - *Continued*

LWR SENSITIVITY CHANGES - SMALL APERTURE

λ (Å)	t=1978.88 f(t)	σ(%)	t=1979.85 f(t)	σ(%)	t=1980.81 f(t)	σ(%)	t=1981.81 f(t)	σ(%)	t=1982.82 f(t)	σ(%)	t=1983.70 f(t)	σ(%)	t=1984.90 f(t)	σ(%)	t=1985.92 f(t)	σ(%)
2950	1.000	0.9	1.046	0.9	1.052	0.5	1.073	0.8	1.111	1.1	1.101	2.1	1.086	1.7	1.100	2.1
2955	1.000	0.9	1.066	0.8	1.095	0.6	1.073	1.1	1.059	1.4	1.055	2.1	1.071	1.7	1.048	2.1
2960	1.000	0.9	1.045	0.9	1.021	0.8	1.017	1.3	1.055	1.2	1.044	2.1	1.020	1.7	1.008	2.2
2965	1.000	0.7	1.038	0.9	1.070	0.9	1.056	0.8	1.101	1.2	1.105	2.0	1.117	1.9	1.122	2.2
2970	1.000	0.8	1.027	0.9	1.015	1.1	1.028	1.0	1.049	1.2	1.055	2.2	1.071	1.9	1.085	2.4
2975	1.000	0.9	1.030	0.4	1.018	0.8	1.060	1.2	1.080	1.2	1.078	2.1	1.064	1.7	1.082	2.4
2980	1.000	0.9	1.024	1.0	1.087	0.8	1.102	0.9	1.115	1.2	1.141	2.3	1.165	2.0	1.109	2.4
2985	1.000	0.9	1.035	0.9	1.004	0.9	1.059	0.9	1.087	1.2	1.138	2.1	1.118	1.8	1.081	2.8
2990	1.000	0.8	1.043	0.8	1.020	0.8	1.066	0.9	1.083	1.4	1.082	2.4	1.100	1.7	1.092	2.4
2995	1.000	0.9	1.061	0.9	1.088	0.6	1.116	1.0	1.144	0.8	1.180	2.3	1.110	1.9	1.112	2.7
3000	1.000	0.9	1.029	0.9	1.034	0.7	1.050	0.8	1.080	1.0	1.097	2.1	1.100	1.7	1.136	3.0
3005	1.000	0.9	0.993	0.8	0.985	0.7	1.004	1.1	1.039	1.3	1.059	2.1	1.096	1.7	1.060	3.0
3010	1.000	0.8	0.987	0.9	0.959	0.9	0.992	0.8	1.011	1.4	1.027	2.6	1.048	1.9	1.059	3.1
3015	1.000	0.7	1.011	1.0	1.001	1.2	1.040	0.9	1.075	1.4	1.055	2.3	1.065	1.8	1.040	2.5
3020	1.000	0.9	1.014	0.8	1.008	0.9	1.067	1.2	1.079	0.9	1.114	2.4	1.104	1.9	1.066	2.5
3025	1.000	0.9	1.029	1.2	1.059	1.1	1.096	1.2	1.113	1.1	1.116	2.2	1.140	1.7	1.067	2.5
3030	1.000	1.3	1.061	1.2	1.121	1.2	1.157	0.9	1.212	1.0	1.219	2.2	1.200	2.1	1.156	2.6
3035	1.000	1.0	1.028	0.9	1.089	0.8	1.099	1.6	1.167	1.0	1.157	2.1	1.148	1.7	1.121	2.5
3040	1.000	0.8	1.054	1.1	1.054	0.8	1.051	0.8	1.073	1.7	1.074	2.7	1.110	1.9	1.126	2.5
3045	1.000	0.9	1.040	1.2	1.060	1.1	1.103	1.1	1.152	1.3	1.168	2.2	1.070	1.8	1.124	2.4
3050	1.000	0.8	1.010	1.0	1.073	0.9	1.069	1.5	1.116	1.6	1.118	3.0	1.084	1.8	1.094	2.5
3055	1.000	0.9	1.082	1.4	1.099	1.0	1.107	1.2	1.156	1.6	1.162	2.2	1.127	1.8	1.179	2.6
3060	1.000	1.0	1.045	1.3	1.028	1.0	1.040	1.4	1.071	1.7	1.038	2.3	1.044	2.0	1.037	2.2
3065	1.000	1.0	1.059	1.2	1.020	1.3	0.997	0.9	1.038	1.7	1.076	2.2	1.122	1.7	1.077	2.3
3070	1.000	1.0	1.117	1.1	1.049	1.3	1.075	1.4	1.101	1.1	1.168	2.0	1.177	1.9	1.112	2.2
3075	1.000	1.3	1.063	1.3	1.065	1.2	1.135	1.2	1.123	1.4	1.144	2.2	1.191	2.0	1.119	2.3
3080	1.000	1.1	1.038	1.2	1.071	1.2	1.162	1.2	1.183	1.2	1.199	2.1	1.174	2.0	1.183	2.2
3085	1.000	1.0	1.033	1.3	1.069	0.9	1.055	1.4	1.098	1.4	1.076	2.0	1.075	2.0	1.095	2.0
3090	1.000	1.2	1.044	1.6	1.084	1.4	1.116	1.5	1.200	1.4	1.157	2.2	1.122	1.9	1.161	2.0
3095	1.000	1.2	1.066	1.2	1.092	1.2	1.153	1.7	1.209	1.0	1.210	2.2	1.130	2.1	1.120	2.2
3100	1.000	1.3	1.044	0.9	1.029	1.7	1.058	1.4	1.152	1.3	1.150	2.5	1.135	2.0	1.156	2.1
3105	1.000	1.5	1.026	1.0	1.007	1.6	0.965	2.0	1.038	1.6	0.996	2.3	0.986	2.8	1.007	2.0
3110	1.000	1.6	1.090	1.5	1.044	1.8	1.121	1.5	1.151	1.5	1.145	2.4	1.139	2.3	1.094	2.0
3115	1.000	1.5	1.070	1.2	1.122	1.4	1.092	1.9	1.236	1.4	1.219	3.4	1.217	2.0	1.115	2.0
3120	1.000	1.6	1.009	1.5	1.054	2.0	1.117	1.3	1.202	1.8	1.176	2.2	1.241	2.0	1.149	2.3
3125	1.000	1.8	1.016	1.8	1.086	1.9	1.125	1.7	1.189	1.6	1.161	2.5	1.154	2.0	1.155	2.0
3130	1.000	2.1	1.098	1.6	1.096	1.5	1.092	2.2	1.193	1.0	1.165	3.2	1.151	2.0	1.205	2.2
3135	1.000	2.0	1.032	1.7	1.055	1.8	1.065	2.3	1.224	1.5	1.203	2.3	1.169	2.0	1.180	2.8
3140	1.000	1.5	1.085	1.4	1.112	1.6	1.077	2.6	1.182	2.0	1.212	2.2	1.248	2.5	1.178	2.6
3145	1.000	2.8	1.215	2.2	1.161	2.1	1.225	1.9	1.302	2.0	1.251	2.7	1.328	2.8	1.285	2.3
3150	1.000	3.0	1.040	1.6	1.048	1.9	1.089	2.5	1.161	1.6	1.136	2.7	1.193	2.0	1.180	2.1
3155	1.000	2.0	1.169	2.0	1.103	2.6	1.167	2.0	1.298	1.6	1.243	2.9	1.306	2.0	1.224	2.6
3160	1.000	2.5	1.048	2.0	1.155	1.7	1.183	2.5	1.209	1.9	1.181	3.7	1.182	2.8	1.246	2.3
3165	1.000	2.1	1.123	1.8	1.201	2.7	1.203	2.6	1.443	1.1	1.405	2.2	1.338	2.2	1.312	2.9
3170	1.000	2.1	1.073	2.1	1.097	2.5	1.208	2.2	1.301	2.5	1.273	2.8	1.339	2.8	1.556	2.8
3175	1.000	2.6	1.003	2.7	1.007	2.1	1.145	1.8	1.182	2.0	1.141	2.9	1.146	3.3	1.139	4.2
3180	1.000	2.4	1.015	2.3	0.986	2.5	1.077	2.8	1.091	2.5	1.067	2.5	1.071	3.6	0.950	3.1
3185	1.000	3.1	1.156	2.5	1.103	2.4	1.107	3.4	1.327	2.5	1.171	4.4	1.249	2.9	1.178	6.4
3190	1.000	3.1	1.139	1.7	0.964	4.6	0.916	3.4	1.094	2.1	1.197	2.8	1.218	3.1	1.148	4.1
3195	1.000	3.5	0.959	3.2	0.868	4.1	0.961	3.1	1.072	1.9	1.193	3.3	1.079	3.2	1.151	2.7
3200	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3205	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3210	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3215	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3220	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...

TABLE 2b - *Continued*

LWR SENSITIVITY CHANGES - SMALL APERTURE

λ (Å)	t=1978.88 f(t)	σ(%)	t=1979.85 f(t)	σ(%)	t=1980.81 f(t)	σ(%)	t=1981.81 f(t)	σ(%)	t=1982.82 f(t)	σ(%)	t=1983.70 f(t)	σ(%)	t=1984.90 f(t)	σ(%)	t=1985.92 f(t)	σ(%)
3225	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3230	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3235	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3240	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3245	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3250	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3255	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3260	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3265	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3270	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3275	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3280	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3285	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3290	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3295	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3300	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3305	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3310	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3315	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3320	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3325	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3330	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3335	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3340	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3345	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	...
3350	1.000	...	1.071	...	1.065	...	1.100	...	1.202	...	1.184	...	1.194	...	1.180	..

TABLE 2c

LWR SENSITIVITY CHANGES - LARGE APERTURE

λ (Å)	t=1978.90		t=1979.86		t=1980.85		t=1981.81		t=1982.83		t=1983.80		t=1984.90		t=1985.85	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
1850	1.000	2.0	0.888	2.7	0.717	3.6	0.669	3.6	0.615	3.5	0.439	5.1	0.554	3.4	0.499	4.7
1855	1.000	1.7	0.915	2.2	0.821	2.8	0.829	3.4	0.749	3.5	0.690	2.9	0.652	4.3	0.614	5.1
1860	1.000	1.7	0.869	2.1	0.893	1.4	0.894	2.8	0.792	2.9	0.686	2.9	0.766	2.2	0.677	2.8
1865	1.000	1.3	0.910	1.8	0.930	1.8	0.928	3.8	0.832	3.2	0.807	2.9	0.808	3.2	0.795	2.7
1870	1.000	1.7	1.044	1.5	1.043	1.9	1.005	2.1	0.886	2.1	0.852	2.4	0.763	2.5	0.704	1.9
1875	1.000	1.3	0.925	1.9	0.914	1.8	0.937	1.7	0.906	1.6	0.875	1.5	0.840	1.8	0.780	2.6
1880	1.000	1.3	0.989	1.3	1.035	1.4	1.045	1.8	0.996	1.5	1.011	0.9	0.957	2.1	0.889	1.6
1885	1.000	1.3	0.988	1.2	1.000	1.3	0.942	1.4	0.877	1.6	0.835	1.6	0.772	1.8	0.788	1.8
1890	1.000	1.1	0.888	1.4	0.902	1.6	0.933	1.2	0.917	1.7	0.902	1.9	0.922	1.7	0.892	1.3
1895	1.000	1.1	0.872	1.4	0.885	1.4	0.928	1.7	0.842	1.3	0.847	1.3	0.855	1.6	0.842	1.6
1900	1.000	1.1	0.978	1.2	1.062	1.1	1.018	1.4	0.966	1.2	0.914	1.4	0.856	1.3	0.897	1.5
1905	1.000	1.1	1.089	0.8	1.058	1.0	1.038	1.1	0.984	1.1	0.960	1.4	0.891	1.3	0.914	1.6
1910	1.000	1.2	0.956	1.2	0.919	1.2	0.921	1.1	0.913	0.9	0.892	1.4	0.874	1.6	0.876	1.3
1915	1.000	1.1	0.989	1.0	0.974	0.9	0.913	1.0	0.883	1.1	0.850	1.2	0.834	1.4	0.828	0.9
1920	1.000	0.9	0.997	1.0	0.987	1.0	0.944	1.3	0.922	0.9	0.903	1.0	0.872	1.0	0.864	0.8
1925	1.000	1.0	0.968	0.9	0.964	0.8	0.956	1.2	0.918	1.1	0.876	1.0	0.855	1.2	0.839	1.2
1930	1.000	0.9	0.958	0.9	0.929	1.1	0.903	1.3	0.886	1.2	0.864	1.1	0.864	1.5	0.825	1.1
1935	1.000	0.9	0.986	0.8	0.992	1.1	0.971	1.0	0.960	1.0	0.923	0.9	0.888	1.2	0.853	1.3
1940	1.000	0.8	1.005	0.7	0.992	1.2	0.993	1.3	0.928	0.9	0.875	1.2	0.884	1.1	0.882	1.3
1945	1.000	0.7	0.957	0.8	0.950	1.0	1.001	0.9	0.983	0.7	0.955	0.9	0.893	0.8	0.869	1.0
1950	1.000	0.7	0.970	0.8	0.961	1.0	0.961	0.8	0.935	0.8	0.871	0.9	0.869	1.0	0.851	1.0
1955	1.000	1.0	0.990	0.9	0.941	1.1	0.935	1.1	0.896	0.9	0.845	0.8	0.822	1.0	0.801	1.1
1960	1.000	0.8	0.945	0.8	0.910	0.9	0.914	1.1	0.882	0.8	0.818	1.0	0.801	0.7	0.751	1.4
1965	1.000	0.8	0.951	0.8	0.962	1.0	0.986	1.1	0.985	0.7	0.975	0.8	0.932	1.2	0.869	1.3
1970	1.000	0.6	0.967	0.6	0.937	0.7	0.933	1.0	0.895	0.9	0.890	1.1	0.881	0.9	0.865	1.1
1975	1.000	0.6	0.971	0.7	0.940	0.7	0.944	0.8	0.934	1.0	0.910	0.8	0.842	1.2	0.817	1.0
1980	1.000	0.7	0.974	0.7	0.927	0.6	0.937	0.7	0.915	0.9	0.883	0.9	0.847	0.9	0.853	0.9
1985	1.000	0.6	0.975	0.7	0.957	0.7	0.972	0.7	0.952	0.8	0.940	0.8	0.886	0.9	0.850	0.7
1990	1.000	0.6	0.944	0.7	0.926	1.0	0.905	1.0	0.897	0.8	0.874	0.8	0.851	1.0	0.863	0.9
1995	1.000	0.7	0.919	0.8	0.933	0.9	0.926	1.2	0.904	1.0	0.863	1.1	0.835	1.2	0.825	0.8
2000	1.000	0.6	0.994	0.6	1.004	0.8	0.954	1.1	0.907	1.0	0.872	1.0	0.854	0.8	0.878	0.5
2005	1.000	0.5	0.981	0.6	0.974	0.6	0.980	1.0	0.960	0.8	0.921	0.9	0.882	0.8	0.859	0.8
2010	1.000	0.6	0.992	0.8	0.973	0.8	0.948	1.1	0.898	0.8	0.838	1.1	0.810	0.9	0.811	0.9
2015	1.000	0.7	1.045	0.7	1.047	0.8	0.998	0.9	0.977	0.7	0.969	0.8	0.911	0.9	0.913	0.8
2020	1.000	0.5	0.991	0.6	0.967	0.7	0.950	0.8	0.948	0.9	0.914	1.0	0.844	1.0	0.820	1.0
2025	1.000	0.5	0.982	0.7	0.964	0.8	0.944	0.8	0.947	0.7	0.918	0.8	0.888	1.0	0.889	0.8
2030	1.000	0.6	0.997	0.5	0.981	0.7	0.947	0.6	0.957	0.7	0.933	0.8	0.903	0.8	0.873	1.1
2035	1.000	0.6	1.024	0.6	1.000	0.7	0.962	0.8	0.915	0.7	0.883	0.8	0.871	0.7	0.904	0.5
2040	1.000	0.6	0.958	0.8	0.953	0.8	0.978	0.9	0.968	0.8	0.927	0.8	0.873	0.8	0.840	0.9
2045	1.000	0.5	0.970	0.6	0.957	0.7	0.944	0.7	0.928	0.6	0.890	0.9	0.893	0.7	0.884	1.0
2050	1.000	0.6	0.942	0.7	0.935	0.8	0.931	0.6	0.924	0.7	0.894	0.6	0.884	0.9	0.844	1.0
2055	1.000	0.6	0.969	0.6	0.963	0.6	0.969	0.8	0.940	0.5	0.908	0.7	0.897	0.5	0.871	0.8
2060	1.000	0.5	0.986	0.7	1.001	0.7	0.992	0.8	0.942	0.7	0.912	0.6	0.899	0.6	0.882	0.7
2065	1.000	0.6	0.953	0.7	0.973	0.6	0.973	0.8	0.951	0.7	0.904	0.8	0.873	0.9	0.885	0.8
2070	1.000	0.6	1.005	0.7	1.046	0.8	1.009	0.7	0.981	0.7	0.932	0.6	0.896	0.6	0.876	0.9
2075	1.000	0.4	1.008	0.6	0.991	0.7	0.956	0.7	0.970	0.5	0.929	0.8	0.880	0.8	0.877	0.7
2080	1.000	0.7	0.992	0.5	0.970	0.7	0.933	0.7	0.906	0.6	0.852	0.6	0.825	0.9	0.817	1.1
2085	1.000	0.6	0.991	0.7	0.996	0.6	0.953	0.8	0.941	0.7	0.915	0.8	0.911	0.5	0.892	0.8
2090	1.000	0.4	0.972	0.6	0.960	0.7	0.937	1.1	0.928	0.6	0.874	1.0	0.809	0.9	0.804	0.8
2095	1.000	0.6	0.956	0.8	0.938	0.6	0.939	0.9	0.909	0.8	0.872	1.1	0.854	1.0	0.882	1.0
2100	1.000	0.7	1.005	0.7	1.001	0.8	0.964	0.8	0.937	0.8	0.899	0.7	0.835	0.8	0.818	0.8
2105	1.000	0.8	1.002	0.8	1.026	0.9	0.989	0.9	0.943	0.8	0.920	0.8	0.883	1.1	0.861	1.0
2110	1.000	0.7	1.000	0.8	1.001	0.7	0.964	0.9	0.924	0.8	0.906	0.6	0.852	0.7	0.841	0.8
2115	1.000	0.8	0.983	0.9	1.005	0.7	0.991	0.8	0.995	0.7	0.952	0.9	0.877	0.7	0.848	0.8
2120	1.000	0.6	0.980	0.5	0.990	0.7	0.959	0.8	0.942	0.8	0.908	0.7	0.909	0.8	0.922	0.7

TABLE 2c - *Continued*

LWR SENSITIVITY CHANGES - LARGE APERTURE

λ (Å)	t=1978.90 f(t)	σ(%)	t=1979.86 f(t)	σ(%)	t=1980.85 f(t)	σ(%)	t=1981.81 f(t)	σ(%)	t=1982.83 f(t)	σ(%)	t=1983.80 f(t)	σ(%)	t=1984.90 f(t)	σ(%)	t=1985.85 f(t)	σ(%)
2125	1.000	0.6	0.980	0.7	1.011	0.9	0.994	1.0	0.960	0.8	0.930	1.0	0.881	0.9	0.841	0.8
2130	1.000	0.6	0.991	0.7	1.006	0.8	0.989	0.8	1.003	0.8	0.969	0.7	0.962	0.9	0.924	1.1
2135	1.000	0.7	0.981	0.7	0.965	0.7	0.938	0.7	0.920	0.8	0.888	1.0	0.860	0.7	0.852	1.1
2140	1.000	0.7	0.990	0.6	0.978	0.7	0.955	0.8	0.957	0.7	0.961	0.6	0.923	1.1	0.916	0.9
2145	1.000	0.7	0.999	0.6	0.996	0.6	0.949	0.7	0.950	0.7	0.909	0.9	0.890	0.8	0.858	0.4
2150	1.000	0.7	0.977	0.6	0.945	0.9	0.893	0.8	0.865	0.7	0.842	0.8	0.818	0.9	0.823	1.0
2155	1.000	0.7	0.973	0.8	0.967	0.8	0.957	0.6	0.936	0.7	0.898	0.9	0.844	0.8	0.825	1.0
2160	1.000	0.5	1.010	0.8	0.982	0.9	0.948	0.7	0.926	0.7	0.908	0.7	0.892	1.0	0.929	0.9
2165	1.000	0.7	1.011	0.8	0.965	0.9	0.939	1.0	0.941	0.8	0.929	0.9	0.900	1.0	0.937	1.0
2170	1.000	0.6	0.971	0.8	1.000	0.9	0.952	1.0	0.946	0.7	0.911	0.9	0.847	0.9	0.835	0.8
2175	1.000	0.6	0.933	0.8	0.935	0.8	0.932	0.8	0.906	0.7	0.899	0.7	0.866	1.0	0.865	1.2
2180	1.000	0.7	0.938	0.8	0.912	0.8	0.883	1.0	0.848	0.8	0.807	0.8	0.817	1.0	0.833	0.9
2185	1.000	0.7	0.961	0.8	0.958	0.7	0.926	0.9	0.907	0.6	0.859	0.7	0.826	0.8	0.790	0.9
2190	1.000	0.7	0.979	0.6	0.938	0.6	0.923	0.7	0.894	0.7	0.858	0.8	0.781	0.6	0.801	0.8
2195	1.000	0.9	0.981	2.2	0.952	0.8	0.925	0.6	0.907	0.9	0.871	0.6	0.830	0.7	0.817	0.8
2200	1.000	0.6	1.016	1.0	0.984	0.9	0.964	0.8	0.930	1.0	0.907	1.0	0.855	0.9	0.831	0.9
2205	1.000	0.6	0.988	0.7	0.969	0.7	0.958	0.8	0.945	0.6	0.911	0.9	0.881	1.2	0.869	1.2
2210	1.000	0.6	0.967	0.9	0.978	0.8	0.945	0.7	0.934	0.7	0.926	0.7	0.901	0.5	0.884	1.0
2215	1.000	0.7	0.943	0.7	0.934	0.7	0.917	0.9	0.896	0.8	0.857	0.7	0.838	0.8	0.826	1.1
2220	1.000	0.6	0.962	0.6	0.926	0.5	0.906	1.0	0.869	0.7	0.846	0.9	0.829	0.9	0.819	0.7
2225	1.000	0.7	0.975	0.7	0.983	0.8	0.916	1.0	0.883	0.8	0.854	0.7	0.807	0.8	0.813	0.6
2230	1.000	0.6	0.981	0.6	0.947	0.9	0.916	1.0	0.907	0.6	0.898	0.6	0.838	0.9	0.833	0.8
2235	1.000	0.6	1.004	0.8	0.973	0.8	0.913	0.8	0.881	0.8	0.850	0.8	0.832	1.0	0.826	1.0
2240	1.000	0.6	0.933	0.8	0.931	0.9	0.936	0.7	0.956	0.6	0.915	0.8	0.865	0.7	0.816	0.7
2245	1.000	0.7	0.931	0.9	0.924	0.7	0.888	1.1	0.896	1.0	0.870	0.9	0.878	1.0	0.890	0.8
2250	1.000	0.8	1.031	0.8	0.989	0.8	0.922	1.1	0.900	0.6	0.846	0.8	0.800	1.1	0.804	1.0
2255	1.000	0.7	0.984	0.7	0.983	0.6	0.935	0.6	0.907	0.9	0.880	0.8	0.827	0.8	0.824	0.8
2260	1.000	0.7	0.913	1.0	0.902	0.9	0.874	1.1	0.886	0.8	0.871	0.9	0.861	1.2	0.827	0.9
2265	1.000	0.5	0.965	0.8	0.914	1.0	0.873	0.9	0.854	0.9	0.828	0.7	0.835	1.1	0.817	0.8
2270	1.000	0.6	0.987	0.8	0.963	0.8	0.922	0.8	0.888	0.7	0.871	0.9	0.817	1.0	0.776	0.7
2275	1.000	0.6	0.915	0.8	0.896	1.0	0.864	0.9	0.844	0.9	0.827	0.9	0.807	0.9	0.789	1.0
2280	1.000	0.8	0.886	0.7	0.868	0.9	0.864	0.9	0.843	1.3	0.804	1.3	0.789	1.2	0.786	1.0
2285	1.000	0.6	0.985	0.7	0.953	0.8	0.915	0.8	0.899	0.7	0.857	0.8	0.854	1.0	0.844	1.3
2290	1.000	0.6	0.985	0.6	0.971	0.7	0.956	0.8	0.946	0.6	0.906	0.7	0.838	0.7	0.814	0.9
2295	1.000	0.6	0.946	0.5	0.938	0.7	0.912	0.4	0.896	0.7	0.846	0.9	0.848	0.8	0.812	0.9
2300	1.000	0.5	0.996	0.6	0.952	0.7	0.896	0.7	0.872	0.7	0.840	1.0	0.818	1.0	0.811	1.1
2305	1.000	0.7	0.991	0.8	0.896	1.3	0.859	1.0	0.845	1.1	0.830	1.1	0.824	0.8	0.805	0.6
2310	1.000	0.8	1.017	0.8	0.970	1.0	0.878	0.7	0.847	0.6	0.827	0.7	0.807	0.9	0.803	0.8
2315	1.000	0.7	0.980	0.6	0.990	0.7	0.925	0.8	0.894	0.8	0.857	1.0	0.742	0.7	0.721	0.6
2320	1.000	0.6	0.939	0.6	0.908	0.8	0.884	0.6	0.866	0.7	0.837	0.8	0.819	0.7	0.812	0.7
2325	1.000	0.6	0.949	0.6	0.907	1.0	0.881	1.0	0.875	0.9	0.847	0.8	0.867	0.9	0.833	0.5
2330	1.000	0.7	1.005	0.7	0.955	0.8	0.893	0.9	0.893	0.8	0.854	0.8	0.820	1.1	0.806	0.7
2335	1.000	0.6	0.988	0.7	0.961	0.7	0.925	0.8	0.903	0.7	0.851	0.7	0.848	1.0	0.796	0.9
2340	1.000	0.5	1.007	0.7	0.967	0.8	0.927	0.8	0.912	0.7	0.891	0.7	0.841	1.0	0.824	1.1
2345	1.000	0.6	1.027	0.6	1.010	0.8	0.928	0.9	0.883	1.0	0.842	0.9	0.780	0.8	0.751	0.9
2350	1.000	0.6	0.993	0.6	0.977	0.8	0.931	0.8	0.873	0.8	0.849	0.7	0.785	1.1	0.759	1.0
2355	1.000	0.4	0.969	0.6	0.975	0.6	0.929	1.0	0.923	0.7	0.880	0.7	0.847	0.9	0.813	0.9
2360	1.000	0.5	0.940	0.8	0.968	0.7	0.921	0.7	0.900	0.7	0.852	0.7	0.841	0.7	0.829	0.6
2365	1.000	0.7	0.921	0.9	0.891	0.8	0.879	0.9	0.889	0.8	0.862	0.7	0.856	0.8	0.841	0.9
2370	1.000	0.6	0.935	0.7	0.945	0.8	0.927	0.7	0.847	0.7	0.802	0.6	0.770	0.8	0.787	0.6
2375	1.000	0.6	0.985	0.5	1.003	0.6	0.971	0.8	0.964	0.7	0.927	0.8	0.872	0.7	0.842	1.0
2380	1.000	0.9	1.032	0.7	0.997	1.0	0.933	0.7	0.920	0.6	0.899	0.6	0.854	0.7	0.838	1.0
2385	1.000	0.5	0.987	0.7	0.914	1.1	0.858	1.2	0.843	1.1	0.844	1.0	0.842	1.0	0.856	0.8
2390	1.000	0.7	0.906	0.8	0.922	0.9	0.896	0.7	0.912	0.9	0.897	0.9	0.825	1.2	0.812	0.7
2395	1.000	0.7	0.958	0.7	0.973	0.8	0.940	0.9	0.884	0.7	0.868	0.9	0.862	0.9	0.854	0.6

TABLE 2c - *Continued*

LWR SENSITIVITY CHANGES - LARGE APERTURE

λ (Å)	t=1978.90 f(t)	σ(%)	t=1979.86 f(t)	σ(%)	t=1980.85 f(t)	σ(%)	t=1981.81 f(t)	σ(%)	t=1982.83 f(t)	σ(%)	t=1983.80 f(t)	σ(%)	t=1984.90 f(t)	σ(%)	t=1985.85 f(t)	σ(%)
2400	1.000	0.5	1.022	0.6	1.026	0.7	0.960	0.8	0.928	0.5	0.886	0.9	0.818	1.0	0.800	0.6
2405	1.000	0.6	0.931	0.7	0.947	0.7	0.949	0.6	0.926	0.6	0.906	0.6	0.869	0.7	0.848	0.6
2410	1.000	0.6	0.946	0.8	0.986	1.1	0.987	0.8	1.001	0.6	0.987	0.6	0.950	0.7	0.937	0.6
2415	1.000	0.5	0.937	0.8	0.955	0.5	0.931	0.7	0.928	0.6	0.902	0.6	0.862	0.8	0.855	0.7
2420	1.000	0.7	0.917	0.5	0.944	0.8	0.929	0.8	0.933	0.8	0.895	0.8	0.891	0.6	0.887	0.7
2425	1.000	0.5	0.995	0.6	0.965	0.6	0.928	0.8	0.922	0.5	0.913	0.5	0.871	0.6	0.856	0.7
2430	1.000	0.7	0.999	0.9	0.955	0.8	0.928	0.8	0.923	0.5	0.889	0.6	0.844	0.8	0.820	0.7
2435	1.000	0.6	0.930	0.6	0.908	0.7	0.910	1.0	0.909	0.6	0.885	0.7	0.858	0.9	0.859	0.7
2440	1.000	0.5	0.966	0.6	0.944	0.6	0.935	0.9	0.926	0.6	0.893	0.8	0.889	0.8	0.865	0.8
2445	1.000	0.4	0.996	0.6	0.976	0.9	0.934	0.8	0.902	0.6	0.882	0.8	0.866	0.8	0.840	0.8
2450	1.000	0.4	0.957	0.6	0.978	0.7	0.970	0.5	0.958	0.7	0.925	0.9	0.873	0.9	0.844	0.6
2455	1.000	0.7	0.978	0.5	0.969	0.7	0.912	0.8	0.882	0.5	0.851	0.7	0.828	0.9	0.811	0.8
2460	1.000	0.6	0.979	0.7	0.960	0.8	0.924	0.9	0.920	0.5	0.888	0.7	0.857	0.7	0.850	0.8
2465	1.000	0.6	0.967	0.8	0.967	0.6	0.981	0.7	0.983	0.6	0.955	0.8	0.924	0.7	0.894	0.9
2470	1.000	0.6	0.999	0.7	1.033	1.0	1.030	0.8	1.018	0.5	0.989	0.6	0.961	0.5	0.921	0.7
2475	1.000	0.5	1.045	0.6	1.047	0.7	1.008	0.7	1.005	0.5	0.998	0.7	0.990	0.9	0.973	0.8
2480	1.000	0.6	1.004	0.6	0.972	0.8	0.955	0.7	0.926	0.6	0.906	0.6	0.892	0.9	0.881	0.7
2485	1.000	0.7	0.979	0.7	1.026	0.9	1.012	0.8	1.036	0.6	1.033	0.7	1.009	0.8	0.969	0.9
2490	1.000	0.7	0.958	0.7	0.959	0.8	0.970	0.8	1.002	0.8	0.998	0.7	0.984	0.6	0.978	0.9
2495	1.000	0.6	0.965	0.5	0.988	0.8	0.972	1.0	0.975	0.7	0.959	0.8	0.964	0.8	0.976	0.7
2500	1.000	0.5	0.974	0.6	0.925	0.9	0.884	0.7	0.886	0.8	0.864	0.6	0.859	0.7	0.858	0.7
2505	1.000	0.5	0.966	0.7	0.912	0.8	0.924	1.0	0.898	0.7	0.867	0.6	0.870	0.8	0.865	0.8
2510	1.000	0.5	0.988	0.7	0.972	0.6	0.953	0.6	0.944	0.6	0.924	0.4	0.939	0.6	0.938	0.7
2515	1.000	0.6	1.029	0.5	1.011	0.6	0.981	0.6	0.977	0.6	0.949	0.6	0.916	0.8	0.922	0.7
2520	1.000	0.6	1.009	0.6	0.990	0.7	0.978	0.7	0.978	0.7	0.970	0.7	0.943	0.8	0.945	0.5
2525	1.000	0.5	1.011	0.5	0.988	0.7	0.984	0.9	0.957	0.7	0.944	0.5	0.924	0.7	0.976	0.6
2530	1.000	0.5	0.999	0.4	1.012	0.7	1.006	0.7	1.004	0.6	0.963	0.7	0.908	0.8	0.886	0.6
2535	1.000	0.5	0.991	0.4	0.969	0.7	0.978	0.6	0.989	0.5	0.973	0.6	0.961	0.6	0.960	1.0
2540	1.000	0.6	1.012	0.7	1.036	0.7	0.997	0.6	0.943	0.6	0.889	0.6	0.856	0.8	0.855	0.7
2545	1.000	0.5	0.990	0.7	0.985	0.6	0.999	0.8	0.970	0.7	0.943	0.8	0.906	1.0	0.904	0.8
2550	1.000	0.5	1.021	0.5	1.009	0.7	0.976	0.6	0.959	0.5	0.934	0.6	0.892	0.6	0.876	0.6
2555	1.000	0.4	1.017	0.6	0.967	0.6	0.974	0.6	1.001	0.5	1.001	0.6	0.981	0.6	0.979	0.8
2560	1.000	0.6	1.008	0.7	0.988	0.7	0.952	0.9	0.933	0.7	0.895	0.7	0.893	0.5	0.894	0.6
2565	1.000	0.5	1.008	0.6	1.004	0.6	0.971	0.7	0.937	0.6	0.914	0.6	0.890	0.7	0.902	0.5
2570	1.000	0.6	1.005	0.4	1.026	0.6	1.020	0.6	1.010	0.7	0.985	0.9	0.937	0.5	0.923	0.7
2575	1.000	0.7	0.974	0.6	1.004	0.7	1.025	0.6	0.996	0.8	0.964	1.1	0.930	1.2	0.921	1.1
2580	1.000	0.5	0.978	0.5	0.988	0.5	1.006	0.6	0.995	0.6	0.965	0.8	0.946	1.0	0.922	0.8
2585	1.000	0.4	0.980	0.5	0.987	0.5	0.999	0.6	0.982	0.7	0.962	0.7	0.934	0.7	0.925	0.7
2590	1.000	0.4	0.983	0.5	0.969	0.5	0.980	0.6	0.962	0.7	0.949	0.7	0.926	0.6	0.931	0.6
2595	1.000	0.6	0.996	0.5	0.996	0.6	1.000	0.6	0.975	0.5	0.938	0.5	0.906	0.6	0.877	0.6
2600	1.000	0.7	0.957	0.8	0.962	0.5	0.975	0.7	0.971	0.8	0.947	0.7	0.922	0.9	0.878	0.9
2605	1.000	0.5	0.989	0.5	1.003	0.6	0.971	0.6	0.959	0.5	0.921	0.5	0.888	0.7	0.891	0.6
2610	1.000	0.6	1.013	0.5	1.016	0.6	1.009	0.5	0.987	0.4	0.961	0.6	0.903	0.8	0.868	0.6
2615	1.000	0.6	0.975	0.5	0.980	0.5	0.966	0.7	0.952	0.6	0.935	0.7	0.908	0.6	0.889	0.4
2620	1.000	0.6	1.008	0.6	0.996	0.6	0.981	0.6	0.955	0.5	0.942	0.7	0.914	0.9	0.922	0.7
2625	1.000	0.8	0.962	0.7	0.982	0.8	1.001	0.6	1.022	0.5	0.987	0.8	0.946	0.8	0.914	0.6
2630	1.000	0.6	0.996	0.6	1.005	0.5	1.001	0.7	0.988	0.6	0.972	0.5	0.936	0.7	0.908	0.7
2635	1.000	0.5	1.018	0.6	1.008	0.6	0.993	0.6	0.964	0.5	0.933	0.7	0.912	0.8	0.910	0.3
2640	1.000	0.6	0.964	0.5	0.967	0.8	0.979	0.5	0.980	0.5	0.958	0.6	0.942	0.7	0.919	0.7
2645	1.000	0.5	0.989	0.5	1.008	0.7	1.015	0.8	1.016	0.7	1.003	0.5	0.980	0.7	0.951	0.7
2650	1.000	0.6	0.988	0.6	0.994	0.6	1.001	0.6	1.007	0.5	0.995	0.6	0.964	0.6	0.955	1.1
2655	1.000	0.7	0.950	0.6	0.967	0.7	0.976	0.6	0.976	0.5	0.943	0.6	0.910	0.7	0.907	0.6
2660	1.000	0.8	0.929	0.6	0.947	0.5	0.952	0.7	0.932	0.5	0.904	0.5	0.910	0.6	0.894	0.7
2665	1.000	0.5	0.985	0.6	1.012	0.8	1.023	0.5	1.000	0.5	0.976	0.6	0.944	0.7	0.909	0.8
2670	1.000	0.5	1.001	0.6	1.019	0.6	1.026	0.7	1.022	0.8	0.991	0.7	0.960	1.0	0.947	1.0

TABLE 2c - *Continued*

LWR SENSITIVITY CHANGES - LARGE APERTURE

λ (Å)	t=1978.90		t=1979.86		t=1980.85		t=1981.81		t=1982.83		t=1983.80		t=1984.90		t=1985.85	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
2675	1.000	0.6	0.989	0.7	1.016	0.6	0.997	0.6	0.982	0.6	0.971	0.7	0.920	0.9	0.906	0.8
2680	1.000	0.5	0.966	0.6	0.957	0.6	0.972	0.5	0.939	0.6	0.924	0.6	0.897	0.9	0.882	0.8
2685	1.000	0.5	0.970	0.6	0.981	0.7	0.977	0.8	0.958	1.0	0.908	1.0	0.865	1.4	0.868	1.1
2690	1.000	0.5	0.947	0.6	0.913	0.9	0.915	0.9	0.904	0.8	0.900	0.9	0.926	0.7	0.908	0.8
2695	1.000	0.5	0.950	0.5	0.971	0.6	0.972	0.6	0.975	0.4	0.966	0.6	0.941	0.6	0.923	0.9
2700	1.000	0.5	0.972	0.6	0.958	0.6	0.955	0.6	0.934	0.5	0.929	0.5	0.907	0.8	0.916	0.6
2705	1.000	0.6	0.972	0.5	0.965	0.5	0.955	0.6	0.945	0.5	0.904	0.6	0.869	0.8	0.853	0.7
2710	1.000	0.5	0.983	0.5	0.972	0.4	0.978	0.6	0.989	0.5	0.983	0.6	0.965	0.6	0.943	0.8
2715	1.000	0.5	1.017	0.6	1.013	0.6	1.012	0.6	0.996	0.3	0.961	0.7	0.928	0.8	0.938	0.5
2720	1.000	0.3	1.013	0.4	1.014	0.6	1.020	0.4	1.011	0.4	1.000	0.7	0.972	0.8	0.989	0.7
2725	1.000	0.5	0.974	0.6	0.975	0.7	0.971	0.7	0.970	0.5	0.966	0.6	0.940	0.7	0.972	0.4
2730	1.000	0.7	1.008	0.8	1.031	0.6	1.017	0.7	0.983	0.7	0.967	0.6	0.942	0.7	0.913	0.7
2735	1.000	0.6	0.987	0.8	0.989	0.7	0.985	0.7	0.990	0.6	0.985	0.5	0.954	0.8	0.935	0.7
2740	1.000	0.5	0.972	0.7	1.005	0.7	1.020	0.7	1.011	0.5	1.005	0.8	0.953	0.6	0.947	0.7
2745	1.000	0.6	1.015	0.6	1.043	0.6	1.023	0.8	0.999	0.5	0.978	0.7	0.948	0.9	0.946	0.9
2750	1.000	0.6	0.991	0.4	0.968	0.6	0.945	0.8	0.946	0.5	0.947	0.4	0.919	0.7	0.921	0.8
2755	1.000	0.6	0.961	0.6	0.989	0.8	1.001	0.7	0.993	0.6	0.975	0.7	0.958	0.6	0.935	0.6
2760	1.000	0.8	0.970	0.9	0.975	0.7	0.973	0.7	0.953	0.7	0.919	0.9	0.918	1.0	0.930	1.2
2765	1.000	0.8	0.957	0.9	0.956	0.8	0.973	0.5	0.962	0.6	0.949	0.7	0.950	0.7	0.926	0.6
2770	1.000	0.9	0.983	1.1	0.950	0.9	0.965	0.9	0.956	0.6	0.948	0.7	0.926	0.6	0.912	0.7
2775	1.000	0.8	0.977	0.9	0.966	0.7	0.955	0.5	0.939	0.6	0.911	0.6	0.920	0.5	0.919	0.7
2780	1.000	0.8	0.987	0.7	0.979	0.8	0.980	0.5	0.957	0.6	0.924	0.8	0.916	0.6	0.914	0.7
2785	1.000	0.6	0.994	0.4	0.981	0.7	0.995	0.6	0.958	0.6	0.931	0.8	0.885	0.6	0.886	0.7
2790	1.000	0.9	0.975	0.7	0.947	0.8	0.937	0.8	0.894	0.6	0.874	0.8	0.847	0.6	0.859	0.4
2795	1.000	0.8	0.997	0.9	0.958	0.9	0.954	0.7	0.928	0.6	0.894	0.9	0.860	1.0	0.855	0.8
2800	1.000	0.6	1.037	0.7	1.065	0.8	1.034	0.7	1.009	0.8	0.973	0.8	0.919	1.3	0.921	1.0
2805	1.000	0.7	0.992	0.6	0.975	0.8	0.947	1.1	0.958	0.9	0.942	0.8	0.918	1.3	0.921	0.9
2810	1.000	0.8	0.960	0.6	0.989	0.9	0.979	0.8	0.946	0.8	0.924	0.7	0.891	0.8	0.875	1.0
2815	1.000	0.6	1.008	0.6	1.002	0.7	0.985	0.7	0.963	0.8	0.934	0.9	0.920	0.8	0.922	0.6
2820	1.000	0.6	1.040	0.6	1.012	0.7	0.992	0.9	0.967	0.5	0.953	0.6	0.933	0.7	0.917	0.8
2825	1.000	0.6	1.023	0.9	1.007	0.7	0.983	0.7	0.965	0.6	0.933	0.6	0.913	0.6	0.889	0.7
2830	1.000	0.7	0.968	0.8	0.997	0.6	1.004	0.5	1.008	0.5	0.970	0.6	0.970	0.6	0.955	0.6
2835	1.000	0.5	0.957	0.8	0.976	0.6	0.975	0.7	0.992	0.6	0.954	0.6	0.947	0.9	0.918	0.7
2840	1.000	0.6	0.987	0.6	0.967	0.7	0.947	0.6	0.948	0.6	0.926	0.6	0.908	0.7	0.896	0.9
2845	1.000	0.5	1.021	0.7	0.985	0.7	0.944	0.8	0.909	0.8	0.851	0.7	0.839	0.6	0.828	1.0
2850	1.000	0.6	0.997	0.8	0.990	0.7	0.972	0.7	0.942	0.6	0.889	0.6	0.856	0.6	0.867	0.9
2855	1.000	0.4	0.978	0.6	0.981	0.7	0.991	1.1	0.983	0.7	0.944	0.7	0.913	0.6	0.892	1.0
2860	1.000	0.5	0.987	0.7	0.975	0.7	0.962	0.9	0.918	0.7	0.897	0.6	0.866	1.2	0.873	0.9
2865	1.000	0.5	1.003	0.7	0.989	0.6	0.984	0.8	0.958	0.6	0.929	0.5	0.901	1.1	0.875	0.9
2870	1.000	0.6	1.003	0.6	0.990	0.7	0.980	0.7	0.969	0.6	0.934	0.5	0.913	0.8	0.901	0.7
2875	1.000	0.5	0.997	0.6	0.990	0.5	0.972	0.7	0.986	0.5	0.944	0.6	0.906	0.9	0.889	0.8
2880	1.000	0.6	0.976	0.6	0.964	0.5	0.951	0.6	0.951	0.6	0.935	0.6	0.885	0.8	0.880	0.9
2885	1.000	0.6	0.993	0.7	0.974	0.5	0.961	0.7	0.965	0.6	0.946	0.6	0.919	0.8	0.876	0.6
2890	1.000	0.6	1.011	0.5	1.008	0.6	0.996	0.8	0.949	0.6	0.898	0.6	0.874	0.8	0.858	0.8
2895	1.000	0.6	1.004	0.6	1.036	0.8	1.038	1.0	1.036	0.5	0.988	0.6	0.921	0.7	0.899	0.8
2900	1.000	0.6	1.000	0.6	0.995	0.7	0.982	0.8	1.018	0.6	1.014	0.7	0.969	0.9	0.964	1.1
2905	1.000	0.6	0.999	0.9	1.011	0.8	1.011	0.8	0.985	0.9	0.953	1.0	0.942	1.1	0.966	1.0
2910	1.000	0.5	1.015	0.7	1.005	0.6	0.987	0.7	1.004	0.5	0.975	0.7	0.958	0.8	0.927	1.4
2915	1.000	0.6	1.006	0.7	0.943	0.9	0.942	0.9	0.935	0.7	0.917	0.7	0.896	1.1	0.901	1.2
2920	1.000	0.6	0.985	0.7	0.956	0.8	0.950	0.6	0.937	0.7	0.915	0.8	0.910	0.9	0.929	1.1
2925	1.000	0.6	0.984	0.6	1.017	0.8	1.036	0.7	1.039	0.6	1.019	0.6	0.955	0.8	0.961	0.9
2930	1.000	0.5	1.014	0.5	1.004	0.7	0.964	0.9	0.945	0.8	0.908	0.9	0.891	1.1	0.899	0.9
2935	1.000	0.7	1.010	0.5	0.981	0.9	0.952	0.7	0.997	0.7	0.967	0.7	0.897	1.1	0.862	1.1
2940	1.000	0.5	0.973	0.6	0.957	0.9	0.906	1.1	0.873	0.9	0.839	0.8	0.856	0.9	0.864	0.7
2945	1.000	0.6	1.008	0.5	1.020	0.7	1.002	1.0	1.034	0.7	1.010	0.7	0.955	1.0	0.910	1.2

TABLE 2c - *Continued*

LWR SENSITIVITY CHANGES - LARGE APERTURE

λ (Å)	t=1978.90 f(t)	σ(%)	t=1979.86 f(t)	σ(%)	t=1980.85 f(t)	σ(%)	t=1981.81 f(t)	σ(%)	t=1982.83 f(t)	σ(%)	t=1983.80 f(t)	σ(%)	t=1984.90 f(t)	σ(%)	t=1985.85 f(t)	σ(%)
2950	1.000	0.7	1.001	0.6	1.008	0.6	0.972	0.8	0.982	0.6	0.953	0.6	0.932	0.8	0.933	0.8
2955	1.000	0.5	1.006	0.8	0.981	0.6	0.935	1.0	0.895	1.0	0.844	0.9	0.843	0.8	0.865	0.9
2960	1.000	0.6	1.014	0.6	1.028	0.9	1.004	0.8	0.991	0.7	0.977	0.8	0.898	1.2	0.880	0.9
2965	1.000	0.6	1.014	0.6	1.010	0.8	1.009	0.9	1.019	0.6	1.025	0.7	1.031	0.5	0.964	1.0
2970	1.000	0.7	0.985	0.7	1.006	0.8	1.017	0.6	0.994	0.6	0.970	0.7	0.946	0.7	0.923	0.8
2975	1.000	0.6	0.971	0.7	0.981	0.8	0.990	0.8	0.993	0.6	0.984	0.6	0.949	0.7	0.944	0.6
2980	1.000	0.5	0.978	0.8	0.974	0.8	0.941	0.5	0.956	0.5	0.962	0.5	0.949	0.5	0.953	0.8
2985	1.000	0.6	0.984	0.7	0.972	0.7	0.949	0.7	0.967	0.6	0.970	0.7	0.942	0.7	0.948	0.7
2990	1.000	0.5	1.013	0.6	0.991	0.8	0.972	0.8	0.950	0.7	0.924	0.7	0.910	0.9	0.935	0.9
2995	1.000	0.7	0.994	0.8	0.987	0.9	0.978	0.6	0.970	0.6	0.961	0.8	0.949	0.8	0.943	0.6
3000	1.000	0.8	0.979	0.9	0.972	0.9	0.978	0.9	0.971	0.7	0.932	0.9	0.926	0.9	0.893	0.9
3005	1.000	0.9	0.960	0.5	0.972	0.9	0.950	0.7	0.920	0.9	0.894	0.8	0.911	0.9	0.920	0.9
3010	1.000	0.8	0.986	0.8	0.977	0.9	1.011	1.0	0.987	0.7	0.982	1.3	0.913	1.2	0.851	1.2
3015	1.000	0.8	1.001	0.8	0.967	0.8	0.972	0.9	0.959	0.7	0.966	1.0	0.957	0.8	0.945	1.1
3020	1.000	0.7	0.984	0.7	0.974	0.9	1.000	1.0	0.973	0.8	0.937	0.7	0.922	0.9	0.894	1.0
3025	1.000	0.8	1.003	0.8	0.963	1.0	0.974	0.9	0.973	0.6	0.957	1.2	0.946	1.0	0.905	1.3
3030	1.000	0.8	0.997	0.9	0.955	1.0	0.939	1.2	0.895	1.0	0.839	1.0	0.836	1.2	0.825	1.2
3035	1.000	1.0	1.011	1.0	0.989	1.2	0.953	1.2	0.921	0.8	0.896	0.9	0.915	1.2	0.922	1.0
3040	1.000	0.8	0.985	1.1	0.943	1.2	0.929	1.2	0.911	0.8	0.918	1.0	0.933	1.1	0.908	1.3
3045	1.000	0.9	1.043	0.9	1.062	0.9	1.084	0.7	1.035	0.9	0.984	1.0	0.918	0.9	0.859	1.0
3050	1.000	0.9	1.004	1.3	1.000	1.0	1.015	0.9	0.965	1.1	0.951	1.2	0.908	1.0	0.877	1.4
3055	1.000	0.9	1.021	1.1	1.042	0.8	1.022	0.9	1.028	0.8	1.024	0.8	0.990	0.8	0.990	1.0
3060	1.000	0.8	1.001	0.8	1.014	1.1	1.020	0.8	1.009	0.7	0.939	0.8	0.901	1.1	0.930	1.0
3065	1.000	0.9	0.966	1.0	0.969	1.3	0.941	1.4	0.961	1.1	0.970	1.2	0.966	1.1	0.958	1.0
3070	1.000	0.8	0.980	0.9	0.975	1.0	0.934	1.2	0.892	1.0	0.896	1.2	0.942	1.2	0.940	1.2
3075	1.000	0.8	0.962	1.0	0.966	1.2	0.971	1.1	0.980	1.0	0.962	0.9	0.976	1.4	0.946	1.4
3080	1.000	1.0	1.003	0.8	0.954	1.1	0.924	1.1	0.935	0.8	0.896	0.8	0.933	1.1	0.881	0.9
3085	1.000	1.0	1.021	1.0	1.009	1.0	0.990	1.1	0.954	1.1	0.858	1.0	0.844	1.2	0.858	1.3
3090	1.000	1.2	1.000	1.0	1.032	1.1	1.014	1.3	0.998	1.0	0.976	1.1	0.953	1.1	0.914	1.0
3095	1.000	1.0	1.012	1.0	1.043	1.2	1.085	1.3	1.112	0.9	1.091	1.2	1.017	1.7	0.963	1.2
3100	1.000	1.0	0.985	1.1	0.931	1.5	0.913	1.7	0.837	1.8	0.795	1.6	0.847	1.8	0.932	1.4
3105	1.000	1.0	0.998	1.5	1.010	1.1	0.996	1.2	0.999	1.1	0.968	0.9	0.945	1.3	0.953	1.3
3110	1.000	0.7	0.990	1.1	0.956	1.4	0.946	1.7	0.956	1.4	0.944	1.1	0.936	1.6	0.913	1.4
3115	1.000	1.2	0.992	1.3	1.017	1.3	1.027	1.4	0.998	1.4	0.953	1.3	0.950	1.6	0.901	1.5
3120	1.000	1.2	1.009	1.2	0.953	1.5	0.979	1.5	0.963	1.2	0.966	1.2	1.013	1.3	1.025	1.5
3125	1.000	1.2	1.020	1.0	0.997	1.4	0.971	1.4	0.996	1.2	0.983	1.3	0.912	1.4	0.871	1.1
3130	1.000	1.3	0.985	1.3	1.013	1.5	1.000	1.4	1.044	1.2	1.058	1.3	1.016	1.1	0.970	1.6
3135	1.000	1.1	0.977	1.4	0.952	1.2	0.961	1.4	0.946	1.1	0.880	1.2	0.904	1.9	0.882	1.4
3140	1.000	1.1	0.970	1.3	0.949	0.9	0.982	1.2	0.959	1.3	0.954	1.4	0.948	2.2	0.860	1.6
3145	1.000	1.2	0.980	1.7	1.003	1.3	1.009	1.6	1.026	1.1	1.012	1.3	0.980	1.7	0.982	1.6
3150	1.000	1.0	0.999	1.3	0.950	1.8	0.958	1.7	0.931	1.2	0.884	1.0	0.959	1.4	0.975	1.5
3155	1.000	1.3	1.031	1.6	1.031	1.5	0.986	1.6	0.894	2.0	0.818	2.2	0.858	2.6	0.882	1.9
3160	1.000	1.6	1.007	1.8	0.958	1.6	0.932	1.4	0.975	1.8	1.040	1.3	0.998	2.5	0.969	2.1
3165	1.000	1.6	0.998	1.5	1.017	1.4	1.055	1.2	0.937	1.9	0.806	1.3	0.762	2.2	0.717	2.0
3170	1.000	1.7	1.017	1.7	1.101	1.6	1.104	1.9	1.080	1.5	0.985	1.4	0.963	1.6	0.908	1.4
3175	1.000	2.3	1.030	2.0	0.962	2.3	0.895	1.9	1.112	1.6	1.136	1.5	1.189	1.6	1.117	2.0
3180	1.000	1.7	0.992	1.7	1.000	1.7	0.961	2.0	0.916	2.0	0.795	2.7	0.826	3.2	0.860	2.1
3185	1.000	2.1	1.001	1.5	0.932	1.7	0.968	2.3	0.850	2.2	0.808	2.2	0.800	2.4	0.857	1.6
3190	1.000	2.4	1.069	2.4	0.861	2.8	0.850	2.6	0.866	1.7	0.912	1.7	0.880	2.2	0.840	1.3
3195	1.000	1.9	1.040	1.8	0.975	2.2	1.005	1.7	0.989	1.5	0.882	1.9	0.830	1.6	0.827	2.2
3200	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3205	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3210	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3215	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3220	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...

TABLE 2c - *Continued*

LWR SENSITIVITY CHANGES - LARGE APERTURE

λ (Å)	t=1978.90 f(t)	σ(%)	t=1979.86 f(t)	σ(%)	t=1980.85 f(t)	σ(%)	t=1981.81 f(t)	σ(%)	t=1982.83 f(t)	σ(%)	t=1983.80 f(t)	σ(%)	t=1984.90 f(t)	σ(%)	t=1985.85 f(t)	σ(%)
3225	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3230	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3235	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3240	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3245	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3250	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3255	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3260	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3265	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3270	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3275	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3280	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3285	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3290	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3295	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3300	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3305	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3310	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3315	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3320	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3325	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3330	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3335	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3340	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3345	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...
3350	1.000	...	1.005	...	0.978	...	0.975	...	0.964	...	0.929	...	0.926	...	0.912	...

TABLE 3a

SWP SENSITIVITY CHANGES - TRAILED SPECTRA

λ (Å)	t=1978.90		t=1979.85		t=1980.76		t=1981.74		t=1982.93		t=1983.95		t=1984.88		t=1985.75		t=1986.90	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
1150	1.000	3.2	1.072	1.3	0.989	1.0	0.965	1.3	0.897	0.9	0.829	0.9	0.765	1.1	0.783	1.2	0.825	0.9
1155	1.000	2.2	1.031	1.3	0.970	1.2	0.909	0.9	0.853	0.9	0.786	0.7	0.772	1.1	0.768	1.5	0.773	1.0
1160	1.000	2.5	1.022	0.9	0.982	1.0	0.964	0.8	0.916	0.7	0.854	0.6	0.841	0.7	0.828	1.3	0.834	0.5
1165	1.000	1.4	1.036	1.1	1.008	1.0	0.971	0.8	0.927	0.5	0.878	0.7	0.855	0.7	0.854	0.8	0.840	0.6
1170	1.000	1.5	0.960	1.1	0.963	0.8	0.955	0.6	0.898	0.5	0.863	0.6	0.837	0.7	0.804	1.5	0.796	0.7
1175	1.000	2.0	0.991	0.8	0.962	1.2	0.940	0.6	0.882	0.7	0.842	0.6	0.819	0.7	0.825	1.2	0.846	0.6
1180	1.000	2.3	1.035	0.8	1.027	0.8	0.998	0.6	0.933	0.5	0.884	0.6	0.876	0.7	0.874	1.3	0.891	0.6
1185	1.000	4.5	0.979	1.0	0.994	0.9	0.941	0.7	0.896	0.7	0.868	0.6	0.850	0.9	0.822	1.5	0.829	1.0
1190	1.000	3.7	0.936	0.9	0.986	0.9	0.958	0.8	0.898	0.8	0.885	0.7	0.868	0.8	0.857	1.3	0.844	0.8
1195	1.000	3.8	0.942	1.0	0.992	0.7	1.006	0.8	0.944	0.9	0.924	0.6	0.910	0.8	0.896	1.6	0.904	0.6
1200	1.000	3.9	0.997	1.0	0.976	1.1	0.995	0.5	0.939	1.2	0.912	0.4	0.908	0.7	0.902	1.4	0.914	0.6
1205	1.000	3.0	0.983	1.1	0.989	0.8	0.992	0.7	0.941	0.9	0.929	0.5	0.913	0.9	0.910	1.0	0.885	0.5
1210	1.000	4.3	0.975	1.9	0.979	5.0	1.016	2.3	0.978	2.1	0.977	1.7	0.943	2.0	0.894	1.7	0.755	4.0
1215	1.000	3.4	1.079	3.4	1.206	6.9	0.985	2.1	0.882	2.8	0.872	1.0	0.862	4.2	0.837	10.2	0.967	3.9
1220	1.000	5.0	1.058	1.4	1.091	2.3	1.038	1.3	0.951	1.7	0.926	1.3	0.929	2.7	0.929	5.4	0.988	2.1
1225	1.000	2.9	1.016	1.0	1.017	0.8	1.019	0.8	0.977	0.8	0.965	0.5	0.955	0.7	0.945	1.3	0.965	0.5
1230	1.000	1.5	1.008	0.9	1.001	0.8	1.012	0.8	0.969	0.6	0.958	0.4	0.940	0.6	0.963	0.7	0.970	0.6
1235	1.000	1.4	0.990	1.0	0.998	0.8	1.024	0.8	0.977	0.4	0.977	0.4	0.943	0.7	0.958	0.7	0.958	0.6
1240	1.000	1.9	1.017	1.1	1.020	1.0	1.010	0.6	0.976	0.6	0.952	0.4	0.952	0.6	0.938	0.8	0.955	0.5
1245	1.000	1.2	0.974	1.0	0.983	0.8	1.004	0.6	0.956	0.6	0.931	0.3	0.926	0.6	0.922	0.9	0.938	0.5
1250	1.000	1.1	0.991	0.9	1.008	0.8	1.023	0.6	0.983	0.5	0.973	0.4	0.966	0.5	0.976	0.7	0.968	0.6
1255	1.000	1.0	0.985	0.9	1.002	0.7	1.012	0.6	0.979	0.5	0.958	0.3	0.963	0.6	0.942	0.8	0.927	0.6
1260	1.000	0.8	0.963	0.9	0.970	0.7	0.995	0.6	0.955	0.4	0.942	0.4	0.935	0.6	0.927	0.9	0.933	0.6
1265	1.000	1.3	0.990	0.8	1.013	0.7	1.020	0.7	0.977	0.5	0.969	0.5	0.966	0.6	0.973	0.8	0.973	0.5
1270	1.000	1.1	1.005	0.9	1.014	0.8	1.030	0.6	0.986	0.5	0.972	0.4	0.981	0.6	0.968	0.8	0.967	0.6
1275	1.000	0.9	0.964	1.0	0.983	0.8	0.998	0.6	0.964	0.4	0.950	0.4	0.948	0.5	0.937	0.7	0.937	0.6
1280	1.000	1.0	0.976	0.8	0.989	0.8	1.005	0.6	0.972	0.6	0.960	0.5	0.955	0.6	0.947	0.7	0.955	0.5
1285	1.000	1.2	0.982	0.9	0.991	0.9	1.005	0.6	0.958	0.3	0.950	0.4	0.945	0.4	0.931	0.8	0.945	0.5
1290	1.000	1.0	0.973	0.8	0.990	0.9	1.022	0.6	0.980	0.4	0.966	0.3	0.960	0.5	0.946	0.8	0.933	0.6
1295	1.000	1.1	0.941	0.9	0.958	0.9	0.990	0.7	0.948	0.5	0.955	0.4	0.936	0.7	0.907	1.0	0.886	0.5
1300	1.000	1.0	0.941	1.1	0.947	1.0	0.975	0.6	0.944	0.5	0.932	0.4	0.930	0.6	0.914	0.8	0.895	0.5
1305	1.000	1.2	1.011	0.9	1.017	0.9	1.022	0.7	0.981	0.5	0.972	0.5	0.971	0.6	0.974	0.9	0.982	0.5
1310	1.000	1.4	0.999	0.8	1.009	0.8	1.027	0.7	0.990	0.5	0.974	0.4	0.977	0.6	0.998	0.7	0.989	0.4
1315	1.000	1.7	0.987	0.9	1.002	0.7	1.032	0.8	0.983	0.8	0.981	0.5	0.988	0.7	0.979	1.5	0.964	0.5
1320	1.000	2.2	0.973	0.8	1.004	0.7	1.039	0.8	0.996	0.8	0.987	0.6	0.988	0.7	0.985	1.5	0.979	0.6
1325	1.000	2.2	0.984	0.8	1.017	0.7	1.037	0.8	0.982	0.7	0.983	0.6	0.969	0.8	0.978	1.3	0.967	0.6
1330	1.000	1.2	0.952	1.0	0.980	0.7	1.013	0.9	0.983	0.5	0.984	0.5	0.967	0.6	0.948	0.9	0.920	0.4
1335	1.000	1.2	0.948	0.9	0.958	0.8	0.975	0.5	0.926	0.5	0.918	0.4	0.913	0.5	0.931	0.7	0.937	0.6
1340	1.000	1.7	0.985	0.9	1.003	0.8	1.008	0.6	0.982	0.4	0.959	0.4	0.966	0.5	0.949	0.8	0.951	0.5
1345	1.000	1.1	0.980	1.1	0.999	0.7	1.003	0.6	0.966	0.3	0.952	0.4	0.950	0.5	0.941	0.7	0.933	0.6
1350	1.000	0.9	0.966	0.9	0.998	0.8	1.010	0.6	0.964	0.4	0.947	0.4	0.943	0.5	0.936	0.9	0.927	0.5
1355	1.000	1.0	0.954	0.8	0.977	0.8	0.987	0.6	0.951	0.4	0.943	0.4	0.938	0.5	0.934	0.6	0.925	0.5
1360	1.000	0.9	0.949	0.8	0.960	0.7	0.974	0.6	0.938	0.4	0.928	0.4	0.925	0.6	0.904	0.8	0.896	0.4
1365	1.000	1.1	0.950	0.8	0.966	0.7	0.977	0.6	0.938	0.4	0.924	0.3	0.926	0.6	0.916	0.8	0.910	0.5
1370	1.000	1.1	0.962	0.9	0.972	0.7	0.999	0.7	0.975	0.4	0.964	0.4	0.961	0.5	0.946	0.7	0.934	0.5
1375	1.000	1.1	0.962	0.8	0.976	0.8	0.979	0.6	0.935	0.4	0.922	0.4	0.922	0.5	0.909	0.7	0.907	0.5
1380	1.000	1.3	0.952	0.8	0.958	0.8	0.969	0.6	0.938	0.4	0.922	0.4	0.924	0.5	0.911	0.8	0.912	0.6
1385	1.000	1.0	0.955	0.9	0.966	0.7	0.982	0.7	0.948	0.4	0.946	0.4	0.938	0.5	0.922	0.5	0.921	0.6
1390	1.000	1.0	0.923	0.9	0.955	0.7	0.982	0.8	0.953	0.4	0.942	0.4	0.932	0.6	0.893	0.8	0.892	0.5
1395	1.000	0.8	0.952	0.8	0.975	0.8	0.983	0.5	0.935	0.4	0.925	0.4	0.925	0.5	0.923	0.7	0.936	0.3
1400	1.000	1.0	0.945	0.9	0.950	0.9	0.973	0.6	0.946	0.4	0.942	0.5	0.930	0.5	0.903	0.7	0.900	0.6
1405	1.000	1.1	0.957	1.0	0.975	0.9	0.970	0.7	0.952	0.4	0.929	0.5	0.927	0.6	0.911	0.7	0.915	0.5
1410	1.000	1.0	0.956	1.0	0.971	0.9	0.980	0.5	0.940	0.4	0.921	0.3	0.921	0.5	0.913	0.7	0.909	0.4
1415	1.000	0.8	0.919	0.9	0.935	0.8	0.948	0.7	0.923	0.3	0.913	0.4	0.902	0.5	0.880	0.7	0.883	0.3
1420	1.000	1.0	0.950	0.8	0.970	0.7	0.966	0.6	0.930	0.3	0.922	0.3	0.922	0.5	0.912	0.7	0.914	0.5

TABLE 3a - *Continued*

SWP SENSITIVITY CHANGES - TRAILED SPECTRA

λ (Å)	t=1978.90		t=1979.85		t=1980.76		t=1981.74		t=1982.93		t=1983.95		t=1984.88		t=1985.75		t=1986.90	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
1425	1.000	1.1	0.932	0.9	0.954	0.7	0.952	0.6	0.927	0.4	0.918	0.5	0.912	0.6	0.898	0.6	0.892	0.5
1430	1.000	0.9	0.947	0.9	0.966	0.7	0.954	0.6	0.921	0.4	0.893	0.3	0.897	0.5	0.878	0.7	0.884	0.5
1435	1.000	1.1	0.949	0.8	0.957	0.8	0.970	0.6	0.950	0.5	0.946	0.4	0.941	0.5	0.921	0.7	0.911	0.6
1440	1.000	0.9	0.946	0.8	0.952	0.7	0.960	0.5	0.925	0.4	0.917	0.3	0.911	0.5	0.896	0.7	0.891	0.5
1445	1.000	0.8	0.940	0.9	0.959	0.9	0.954	0.6	0.932	0.4	0.916	0.2	0.920	0.6	0.900	0.6	0.897	0.6
1450	1.000	1.1	0.934	0.8	0.945	0.7	0.954	0.6	0.934	0.4	0.929	0.4	0.928	0.5	0.912	0.6	0.899	0.4
1455	1.000	1.3	0.943	0.8	0.943	0.7	0.947	0.6	0.921	0.5	0.908	0.4	0.906	0.5	0.897	0.7	0.901	0.5
1460	1.000	0.9	0.951	0.9	0.954	0.7	0.951	0.5	0.932	0.4	0.919	0.4	0.926	0.5	0.902	0.7	0.901	0.5
1465	1.000	0.9	0.946	0.9	0.950	0.7	0.946	0.4	0.925	0.5	0.911	0.4	0.908	0.6	0.897	0.7	0.893	0.5
1470	1.000	0.8	0.965	0.8	0.970	0.7	0.966	0.4	0.945	0.4	0.925	0.5	0.937	0.5	0.913	0.6	0.912	0.5
1475	1.000	0.7	0.943	0.9	0.957	0.7	0.951	0.5	0.930	0.4	0.919	0.4	0.920	0.5	0.904	0.7	0.903	0.3
1480	1.000	0.7	0.963	0.8	0.962	0.7	0.957	0.5	0.929	0.5	0.916	0.4	0.917	0.5	0.902	0.7	0.886	0.5
1485	1.000	1.0	0.957	0.8	0.962	0.7	0.948	0.4	0.927	0.4	0.909	0.3	0.908	0.5	0.906	0.6	0.913	0.5
1490	1.000	1.0	0.946	0.8	0.958	0.7	0.966	0.5	0.944	0.4	0.923	0.4	0.927	0.6	0.909	0.8	0.909	0.3
1495	1.000	0.9	0.933	0.8	0.949	0.8	0.950	0.5	0.926	0.5	0.913	0.4	0.913	0.5	0.894	0.6	0.905	0.6
1500	1.000	1.1	0.936	1.0	0.946	0.8	0.961	0.5	0.938	0.5	0.936	0.4	0.933	0.4	0.912	0.6	0.917	0.4
1505	1.000	1.3	0.940	1.0	0.950	0.7	0.933	0.5	0.925	0.5	0.916	0.4	0.917	0.6	0.902	1.0	0.906	0.6
1510	1.000	1.0	0.920	0.9	0.925	0.7	0.924	0.6	0.916	0.5	0.890	0.4	0.892	0.5	0.872	0.7	0.870	0.4
1515	1.000	0.7	0.928	1.1	0.936	0.7	0.934	0.4	0.905	0.5	0.895	0.4	0.904	0.5	0.883	0.6	0.886	0.4
1520	1.000	0.8	0.941	0.9	0.941	0.8	0.947	0.4	0.922	0.3	0.907	0.4	0.909	0.5	0.892	0.6	0.889	0.5
1525	1.000	0.8	0.923	0.8	0.933	0.7	0.935	0.6	0.910	0.5	0.904	0.4	0.902	0.5	0.882	0.6	0.864	0.6
1530	1.000	1.0	0.949	0.9	0.977	0.7	0.963	0.5	0.946	0.4	0.940	0.4	0.939	0.5	0.919	0.7	0.922	0.5
1535	1.000	1.0	0.953	0.9	0.966	0.7	0.962	0.4	0.932	0.2	0.928	0.3	0.931	0.4	0.922	0.7	0.933	0.6
1540	1.000	1.0	0.941	0.9	0.948	0.8	0.966	0.6	0.937	0.4	0.937	0.4	0.935	0.4	0.923	0.6	0.921	0.6
1545	1.000	1.0	0.952	0.8	0.966	0.9	0.972	0.5	0.945	0.4	0.942	0.3	0.942	0.6	0.906	0.7	0.910	0.4
1550	1.000	1.0	0.969	1.0	0.973	0.8	0.975	0.5	0.946	0.6	0.932	0.5	0.942	0.5	0.923	0.7	0.937	0.4
1555	1.000	1.0	0.968	0.9	0.984	0.8	0.980	0.5	0.948	0.4	0.939	0.4	0.941	0.5	0.927	0.8	0.938	0.4
1560	1.000	1.1	0.924	0.9	0.951	0.8	0.953	0.6	0.939	0.4	0.930	0.4	0.932	0.5	0.920	0.5	0.917	0.4
1565	1.000	1.1	0.953	0.8	0.984	0.7	0.983	0.5	0.953	0.4	0.953	0.4	0.961	0.5	0.953	0.8	0.946	0.4
1570	1.000	1.1	0.976	0.8	0.992	0.7	0.984	0.5	0.954	0.4	0.945	0.4	0.947	0.5	0.941	0.8	0.933	0.6
1575	1.000	1.1	0.968	0.9	0.987	0.7	0.975	0.5	0.954	0.5	0.941	0.4	0.947	0.6	0.937	0.7	0.937	0.6
1580	1.000	1.0	0.955	0.8	0.964	0.7	0.970	0.4	0.948	0.3	0.936	0.4	0.941	0.4	0.928	0.7	0.930	0.5
1585	1.000	1.3	0.977	0.8	0.982	0.7	0.980	0.6	0.955	0.4	0.939	0.5	0.956	0.5	0.945	0.6	0.954	0.6
1590	1.000	1.1	0.958	0.8	0.969	0.8	0.969	0.5	0.947	0.4	0.940	0.3	0.943	0.6	0.920	0.6	0.919	0.5
1595	1.000	0.8	0.949	0.8	0.961	0.7	0.963	0.5	0.943	0.4	0.943	0.5	0.935	0.5	0.927	0.7	0.929	0.6
1600	1.000	0.7	0.948	0.8	0.957	0.7	0.965	0.5	0.945	0.4	0.944	0.3	0.934	0.5	0.923	0.6	0.917	0.4
1605	1.000	0.9	0.943	0.8	0.956	0.8	0.958	0.5	0.939	0.5	0.934	0.4	0.920	0.5	0.912	0.7	0.928	0.4
1610	1.000	0.9	0.949	0.8	0.958	0.7	0.969	0.5	0.941	0.4	0.940	0.3	0.941	0.4	0.923	0.7	0.944	0.5
1615	1.000	1.2	0.968	0.8	0.984	0.7	0.993	0.5	0.953	0.4	0.948	0.5	0.956	0.6	0.942	0.7	0.959	0.4
1620	1.000	1.3	0.967	0.8	0.973	0.8	0.976	0.6	0.943	0.4	0.934	0.4	0.944	0.5	0.934	0.7	0.931	0.6
1625	1.000	1.1	0.958	0.8	0.994	0.7	0.980	0.5	0.957	0.5	0.942	0.4	0.947	0.5	0.945	0.6	0.942	0.6
1630	1.000	0.8	0.944	0.8	0.964	0.7	0.955	0.6	0.939	0.4	0.928	0.4	0.933	0.6	0.925	0.6	0.922	0.6
1635	1.000	1.0	0.928	0.8	0.940	1.0	0.968	0.7	0.944	0.4	0.949	0.5	0.946	0.5	0.931	0.8	0.934	0.5
1640	1.000	0.9	0.965	0.9	0.980	0.9	0.970	0.5	0.944	0.4	0.941	0.4	0.944	0.5	0.932	0.7	0.935	0.4
1645	1.000	1.1	0.981	0.8	0.996	0.8	0.980	0.4	0.949	0.4	0.931	0.5	0.936	0.5	0.933	0.7	0.939	0.6
1650	1.000	0.9	0.934	0.8	0.958	0.7	0.965	0.6	0.937	0.3	0.942	0.4	0.934	0.5	0.928	0.7	0.922	0.4
1655	1.000	0.9	0.922	0.8	0.936	0.8	0.950	0.5	0.917	0.4	0.914	0.5	0.913	0.5	0.900	0.7	0.897	0.5
1660	1.000	0.9	0.933	0.8	0.949	0.8	0.969	0.5	0.939	0.3	0.936	0.4	0.928	0.4	0.914	0.7	0.930	0.5
1665	1.000	0.9	0.951	0.8	0.963	0.8	0.978	0.6	0.958	0.4	0.957	0.4	0.957	0.4	0.950	0.8	0.946	0.6
1670	1.000	0.8	0.938	0.8	0.955	0.7	0.958	0.6	0.942	0.5	0.940	0.4	0.936	0.5	0.918	0.5	0.914	0.4
1675	1.000	0.9	0.969	0.8	0.985	0.7	0.983	0.4	0.947	0.4	0.942	0.3	0.942	0.3	0.931	0.7	0.942	0.6
1680	1.000	1.1	0.949	0.8	0.958	0.7	0.962	0.4	0.941	0.3	0.938	0.5	0.936	0.6	0.920	0.6	0.934	0.5
1685	1.000	1.1	0.948	0.9	0.967	0.8	0.969	0.5	0.945	0.3	0.933	0.3	0.936	0.5	0.928	0.6	0.925	0.4
1690	1.000	1.0	0.944	0.8	0.962	0.8	0.952	0.5	0.933	0.4	0.923	0.3	0.931	0.5	0.916	0.7	0.918	0.2
1695	1.000	0.6	0.965	0.8	0.972	0.8	0.962	0.5	0.930	0.5	0.928	0.4	0.930	0.4	0.918	0.7	0.915	0.4

TABLE 3a - *Continued*

SWP SENSITIVITY CHANGES - TRAILED SPECTRA

λ (Å)	t=1978.90		t=1979.85		t=1980.76		t=1981.74		t=1982.93		t=1983.95		t=1984.88		t=1985.75		t=1986.90	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
1700	1.000	0.8	0.956	0.8	0.964	0.7	0.959	0.5	0.936	0.3	0.930	0.3	0.927	0.3	0.917	0.6	0.914	0.4
1705	1.000	1.0	0.941	1.0	0.945	0.7	0.961	0.5	0.934	0.4	0.933	0.4	0.934	0.5	0.913	0.7	0.916	0.4
1710	1.000	1.0	0.937	0.8	0.947	0.8	0.957	0.4	0.934	0.4	0.924	0.3	0.929	0.5	0.911	0.7	0.914	0.4
1715	1.000	1.0	0.933	0.8	0.936	0.8	0.950	0.7	0.934	0.5	0.922	0.4	0.918	0.5	0.908	0.7	0.901	0.5
1720	1.000	0.9	0.934	0.9	0.952	0.8	0.950	0.5	0.928	0.4	0.909	0.5	0.905	0.5	0.898	0.7	0.907	0.5
1725	1.000	1.5	0.958	0.8	0.962	0.7	0.957	0.6	0.940	0.5	0.912	0.4	0.923	0.6	0.918	0.6	0.929	0.6
1730	1.000	1.4	0.970	0.8	0.984	0.7	0.954	0.4	0.929	0.3	0.912	0.3	0.918	0.5	0.903	0.7	0.902	0.5
1735	1.000	1.1	0.942	0.8	0.961	0.8	0.956	0.4	0.935	0.4	0.915	0.4	0.922	0.5	0.902	0.5	0.906	0.5
1740	1.000	0.9	0.946	0.8	0.956	0.7	0.959	0.4	0.929	0.4	0.918	0.4	0.916	0.5	0.906	0.6	0.900	0.5
1745	1.000	0.8	0.956	0.8	0.957	0.7	0.955	0.5	0.923	0.4	0.913	0.3	0.903	0.5	0.892	0.6	0.895	0.6
1750	1.000	1.0	0.944	0.9	0.952	0.8	0.957	0.4	0.930	0.4	0.921	0.3	0.917	0.5	0.905	0.7	0.909	0.5
1755	1.000	0.8	0.931	0.9	0.944	0.7	0.943	0.5	0.921	0.4	0.909	0.3	0.912	0.4	0.892	0.8	0.896	0.5
1760	1.000	0.9	0.935	0.8	0.946	0.7	0.940	0.5	0.921	0.3	0.908	0.2	0.908	0.5	0.891	0.8	0.882	0.3
1765	1.000	0.9	0.964	0.8	0.970	0.7	0.958	0.5	0.930	0.4	0.915	0.3	0.921	0.4	0.901	0.7	0.910	0.5
1770	1.000	1.0	0.940	0.8	0.951	0.7	0.947	0.5	0.933	0.2	0.917	0.4	0.921	0.4	0.894	0.7	0.910	0.4
1775	1.000	1.0	0.952	0.8	0.958	0.7	0.952	0.5	0.928	0.4	0.919	0.4	0.920	0.6	0.901	0.6	0.902	0.5
1780	1.000	1.0	0.943	0.8	0.955	0.7	0.949	0.6	0.925	0.4	0.910	0.4	0.911	0.4	0.897	0.7	0.897	0.5
1785	1.000	1.0	0.943	0.8	0.943	0.7	0.942	0.5	0.926	0.4	0.910	0.4	0.914	0.5	0.896	0.6	0.889	0.5
1790	1.000	1.0	0.953	0.8	0.948	0.7	0.943	0.4	0.916	0.3	0.907	0.4	0.901	0.4	0.891	0.6	0.891	0.5
1795	1.000	1.0	0.960	0.8	0.949	0.7	0.944	0.4	0.914	0.2	0.904	0.4	0.901	0.4	0.891	0.7	0.890	0.5
1800	1.000	1.0	0.946	0.9	0.948	0.7	0.945	0.6	0.915	0.3	0.908	0.4	0.901	0.4	0.894	0.6	0.892	0.5
1805	1.000	0.9	0.938	0.8	0.921	0.8	0.921	0.5	0.894	0.3	0.889	0.4	0.885	0.4	0.870	0.8	0.863	0.5
1810	1.000	0.9	0.926	0.9	0.919	0.7	0.912	0.5	0.894	0.4	0.885	0.3	0.886	0.4	0.866	0.7	0.862	0.3
1815	1.000	0.9	0.936	0.8	0.936	0.7	0.925	0.4	0.905	0.3	0.887	0.4	0.888	0.5	0.868	0.7	0.870	0.4
1820	1.000	0.8	0.941	0.8	0.936	0.7	0.937	0.4	0.911	0.3	0.893	0.4	0.892	0.4	0.875	0.7	0.885	0.5
1825	1.000	0.9	0.946	0.9	0.949	0.7	0.944	0.5	0.920	0.4	0.905	0.2	0.906	0.4	0.893	0.7	0.885	0.4
1830	1.000	0.9	0.948	1.0	0.955	0.7	0.948	0.5	0.917	0.3	0.910	0.4	0.911	0.5	0.892	0.7	0.890	0.5
1835	1.000	1.0	0.934	0.8	0.939	0.7	0.944	0.6	0.925	0.3	0.919	0.5	0.921	0.5	0.897	0.6	0.895	0.5
1840	1.000	1.0	0.921	0.8	0.925	0.8	0.915	0.5	0.899	0.4	0.892	0.4	0.888	0.5	0.869	0.6	0.866	0.5
1845	1.000	0.9	0.933	0.9	0.937	0.7	0.926	0.5	0.906	0.4	0.895	0.4	0.890	0.4	0.874	0.6	0.869	0.6
1850	1.000	0.9	0.912	0.8	0.926	0.7	0.921	0.6	0.898	0.4	0.898	0.3	0.892	0.5	0.873	0.7	0.866	0.7
1855	1.000	0.9	0.931	0.9	0.936	0.7	0.920	0.5	0.891	0.3	0.887	0.4	0.879	0.5	0.861	0.6	0.869	0.5
1860	1.000	1.0	0.948	0.8	0.943	0.7	0.950	0.5	0.914	0.4	0.908	0.4	0.900	0.4	0.883	0.5	0.880	0.4
1865	1.000	0.9	0.952	0.8	0.947	0.7	0.950	0.4	0.917	0.4	0.909	0.3	0.907	0.4	0.895	0.6	0.898	0.4
1870	1.000	1.1	0.940	0.8	0.934	0.7	0.929	0.4	0.904	0.4	0.892	0.4	0.891	0.5	0.878	0.6	0.882	0.3
1875	1.000	0.9	0.942	0.9	0.927	0.7	0.926	0.5	0.906	0.4	0.891	0.3	0.889	0.5	0.873	0.6	0.865	0.4
1880	1.000	0.9	0.920	0.9	0.918	0.7	0.917	0.6	0.893	0.4	0.883	0.4	0.879	0.6	0.862	0.5	0.854	0.4
1885	1.000	0.8	0.921	0.9	0.918	0.7	0.913	0.6	0.899	0.4	0.892	0.4	0.889	0.5	0.868	0.6	0.866	0.3
1890	1.000	0.9	0.921	0.9	0.923	0.7	0.924	0.5	0.902	0.4	0.888	0.3	0.887	0.5	0.863	0.5	0.859	0.4
1895	1.000	0.8	0.936	0.9	0.944	0.7	0.924	0.5	0.897	0.4	0.883	0.3	0.889	0.5	0.876	0.7	0.875	0.3
1900	1.000	0.7	0.936	0.9	0.934	0.8	0.932	0.4	0.911	0.4	0.893	0.3	0.896	0.5	0.882	0.7	0.877	0.4
1905	1.000	0.9	0.931	0.8	0.926	0.8	0.932	0.4	0.905	0.4	0.886	0.3	0.891	0.5	0.874	0.5	0.872	0.5
1910	1.000	0.8	0.930	0.8	0.932	0.7	0.919	0.4	0.903	0.4	0.887	0.3	0.885	0.5	0.871	0.6	0.855	0.4
1915	1.000	0.8	0.933	0.8	0.915	0.8	0.918	0.5	0.898	0.4	0.885	0.1	0.875	0.4	0.866	0.7	0.848	0.5
1920	1.000	0.9	0.934	0.8	0.914	0.7	0.909	0.4	0.884	0.3	0.865	0.4	0.863	0.4	0.844	0.6	0.849	0.4
1925	1.000	0.9	0.935	0.8	0.912	0.7	0.900	0.3	0.870	0.4	0.853	0.5	0.852	0.5	0.831	0.6	0.837	0.4
1930	1.000	0.9	0.931	0.8	0.921	0.7	0.910	0.3	0.873	0.5	0.848	0.5	0.853	0.5	0.835	0.5	0.849	0.4
1935	1.000	1.0	0.954	0.8	0.946	0.7	0.942	0.5	0.923	0.3	0.902	0.4	0.901	0.4	0.882	0.5	0.874	0.3
1940	1.000	0.9	0.946	0.8	0.946	0.7	0.929	0.3	0.903	0.3	0.886	0.4	0.880	0.3	0.865	0.6	0.865	0.4
1945	1.000	1.0	0.950	0.8	0.946	0.7	0.928	0.4	0.909	0.4	0.891	0.4	0.889	0.4	0.878	0.6	0.866	0.4
1950	1.000	0.9	0.947	1.0	0.940	0.7	0.923	0.3	0.900	0.4	0.886	0.3	0.879	0.5	0.866	0.7	0.852	0.5
1955	1.000	0.7	0.942	0.9	0.929	0.7	0.916	0.4	0.893	0.4	0.876	0.3	0.873	0.3	0.859	0.6	0.854	0.4
1960	1.000	0.8	0.968	1.0	0.941	0.7	0.927	0.3	0.911	0.4	0.902	0.4	0.894	0.4	0.880	0.6	0.877	0.5
1965	1.000	0.9	0.990	1.2	0.947	0.8	0.921	0.3	0.899	0.2	0.889	0.3	0.882	0.4	0.872	0.5	0.870	0.5
1970	1.000	0.9	1.019	1.1	0.967	0.9	0.935	0.4	0.909	0.3	0.894	0.4	0.889	0.4	0.875	0.5	0.873	0.5

TABLE 3b

SWP SENSITIVITY CHANGES - SMALL APERTURE

λ (Å)	t=1978.89		t=1979.84		t=1980.85		t=1981.81		t=1982.83		t=1983.98		t=1984.95		t=1985.82		t=1987.11	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
1150	1.000	2.0	1.193	1.1	1.027	2.0	1.090	2.1	0.937	1.9	0.861	1.1	0.859	2.0	0.869	2.3	0.915	5.4
1155	1.000	1.3	1.043	1.3	1.019	1.6	1.041	1.4	0.941	1.5	0.851	1.2	0.837	1.6	0.825	1.8	0.896	5.2
1160	1.000	1.3	1.006	1.3	0.995	1.9	1.028	1.7	0.948	1.4	0.891	1.1	0.904	1.6	0.858	2.0	0.936	2.6
1165	1.000	1.1	1.016	0.7	1.046	1.1	1.041	0.9	1.001	1.3	0.931	1.2	0.931	1.3	0.898	1.6	0.908	2.6
1170	1.000	0.9	0.978	0.8	0.946	1.4	0.969	0.9	0.964	1.0	0.908	1.0	0.891	1.5	0.876	1.8	0.810	1.9
1175	1.000	1.0	1.024	0.8	1.001	1.4	0.980	1.3	0.907	0.9	0.910	0.9	0.900	1.5	0.878	1.5	0.954	2.8
1180	1.000	1.0	1.048	0.8	1.046	0.9	1.032	1.2	0.977	1.2	0.933	0.8	0.926	1.1	0.911	1.5	0.985	1.8
1185	1.000	0.8	1.020	0.6	1.008	0.8	1.023	0.9	0.970	0.9	0.935	0.8	0.920	1.2	0.904	2.0	0.980	1.8
1190	1.000	0.8	1.017	0.6	0.994	0.7	0.981	0.6	0.959	0.9	0.921	0.7	0.912	1.3	0.906	1.6	0.890	1.9
1195	1.000	0.7	1.046	0.7	1.048	0.7	1.046	0.7	1.025	1.0	0.975	0.9	0.995	1.2	0.982	1.5	0.944	1.8
1200	1.000	0.8	1.031	0.7	1.016	0.8	0.989	0.9	0.979	1.5	0.970	0.6	0.932	1.5	0.898	1.6	0.928	2.1
1205	1.000	0.8	1.004	0.7	1.033	1.1	1.018	1.0	1.018	1.8	0.978	1.0	0.969	1.6	0.949	1.8	0.953	1.8
1210	1.000	1.2	1.019	1.5	0.998	1.9	0.937	5.9	1.003	2.7	1.015	1.6	0.973	2.1	0.918	2.7	0.000	0.0
1215	1.000	1.6	1.051	1.1	1.040	2.3	1.155	7.3	0.992	3.9	1.019	2.1	0.973	2.1	0.945	2.7	0.000	0.0
1220	1.000	2.6	1.048	1.6	1.099	3.2	1.109	4.7	1.035	2.7	0.969	2.9	0.980	2.1	1.109	2.7	0.000	0.0
1225	1.000	0.7	1.029	0.6	1.031	1.1	1.043	1.1	1.029	1.8	0.987	1.1	0.995	1.6	0.972	1.7	0.997	1.8
1230	1.000	0.6	1.043	0.6	1.035	0.9	1.018	0.7	1.007	1.1	1.004	0.7	0.980	1.0	0.989	1.4	1.016	1.9
1235	1.000	0.6	1.029	0.8	1.028	0.8	1.043	1.3	1.035	1.1	1.033	0.9	0.998	1.1	0.976	1.5	0.981	1.8
1240	1.000	0.9	0.999	0.6	1.037	1.1	1.061	1.1	1.033	1.1	1.019	1.1	1.017	1.2	0.957	1.6	1.043	3.3
1245	1.000	0.5	1.021	0.5	1.033	1.0	1.032	0.8	1.038	0.8	1.018	0.9	1.008	1.0	0.984	1.4	0.953	1.9
1250	1.000	0.5	1.020	0.6	1.036	0.8	1.050	0.7	1.030	0.9	1.019	0.8	0.992	1.2	0.989	1.4	0.991	1.8
1255	1.000	0.6	1.013	0.6	1.058	1.0	1.051	0.7	1.065	1.0	1.055	0.7	1.039	0.9	1.018	1.4	1.003	1.8
1260	1.000	0.4	1.008	0.5	1.052	1.0	1.042	0.8	1.021	1.0	1.023	0.6	1.023	1.0	0.987	1.4	1.025	1.8
1265	1.000	0.5	1.019	0.5	1.055	0.9	1.055	0.8	1.044	1.0	1.053	0.8	1.051	1.0	1.030	1.4	1.022	1.8
1270	1.000	0.5	1.029	0.5	1.053	0.9	1.051	0.9	1.045	0.8	1.037	0.7	1.032	0.7	0.991	1.5	1.013	1.8
1275	1.000	0.5	1.045	0.5	1.080	0.8	1.076	0.6	1.071	1.4	1.073	0.7	1.053	1.3	1.012	1.5	1.057	1.8
1280	1.000	0.5	1.002	0.6	1.013	0.9	1.039	0.6	1.015	1.4	1.026	1.0	1.017	0.9	0.984	1.6	1.005	1.8
1285	1.000	0.5	1.013	0.6	1.023	0.9	1.031	0.8	1.042	1.4	1.025	1.1	1.036	1.0	1.007	1.7	1.005	1.8
1290	1.000	0.5	1.023	0.5	1.064	1.0	1.051	1.0	1.081	1.3	1.071	1.1	1.063	0.6	1.045	1.7	1.009	1.8
1295	1.000	0.6	0.967	0.5	1.031	1.2	1.032	1.3	1.061	1.1	1.070	1.0	1.072	0.9	1.016	1.6	0.964	1.8
1300	1.000	0.5	1.016	0.6	1.053	0.8	1.040	0.6	1.049	1.2	1.053	0.5	1.054	0.8	1.005	1.4	1.009	1.8
1305	1.000	0.7	1.025	0.6	1.035	1.0	1.052	0.9	0.995	1.4	0.993	0.7	1.003	1.0	0.984	1.4	1.020	1.8
1310	1.000	0.6	1.027	0.7	1.068	0.9	1.054	0.9	1.055	1.1	1.033	0.7	1.028	1.3	0.996	1.5	0.989	1.8
1315	1.000	0.6	1.026	0.7	1.037	0.8	1.026	0.8	1.017	1.3	1.045	0.8	1.034	1.0	1.003	1.7	0.991	1.8
1320	1.000	0.6	1.003	0.5	1.013	1.0	1.035	0.8	1.023	1.4	1.010	0.9	1.018	1.0	0.972	1.7	0.994	1.8
1325	1.000	0.5	1.004	0.6	1.035	1.0	1.019	0.4	1.016	1.3	1.018	1.0	1.013	0.7	1.000	1.6	0.989	1.8
1330	1.000	0.6	0.989	0.6	1.014	0.9	1.016	0.9	1.057	0.9	1.045	0.9	1.022	1.1	0.996	1.7	0.957	1.8
1335	1.000	0.5	0.992	0.6	1.013	0.8	1.022	0.6	0.978	1.2	0.992	1.1	0.973	0.8	0.976	1.6	0.985	1.8
1340	1.000	0.7	1.013	0.5	1.028	0.7	1.020	0.7	1.021	1.5	1.027	0.6	1.032	1.2	0.983	1.5	0.972	1.8
1345	1.000	0.5	1.022	0.5	1.027	0.7	1.035	0.8	1.042	1.0	1.026	0.8	1.015	0.6	0.989	1.6	0.990	1.8
1350	1.000	0.5	1.023	0.6	1.038	0.9	1.033	0.7	1.029	0.8	1.012	1.0	1.026	0.9	0.992	1.4	0.988	1.8
1355	1.000	0.5	0.999	0.7	1.027	0.5	1.033	0.7	1.030	0.7	1.024	0.9	1.015	0.4	0.980	1.5	0.959	1.8
1360	1.000	0.5	1.009	0.6	1.034	0.7	1.036	0.6	1.040	1.3	1.040	0.8	1.030	0.6	0.985	1.5	0.965	1.8
1365	1.000	0.5	1.018	0.7	1.027	0.8	1.029	0.9	1.021	1.0	1.010	0.6	1.016	0.8	1.001	1.4	1.010	1.8
1370	1.000	0.6	1.007	0.7	1.034	0.7	1.047	0.9	1.031	1.0	1.036	0.7	1.008	1.0	0.985	1.5	0.977	1.8
1375	1.000	0.4	1.012	0.5	1.033	0.9	1.043	0.6	1.063	0.5	1.009	1.0	1.011	1.3	0.985	1.5	0.998	1.8
1380	1.000	0.5	0.985	0.5	1.019	0.8	1.022	0.8	1.033	0.9	1.018	0.5	1.013	1.0	1.019	1.4	0.990	1.8
1385	1.000	0.4	0.972	0.6	0.985	0.5	0.992	0.7	1.005	1.0	1.003	0.6	0.994	0.9	0.966	1.4	0.930	1.8
1390	1.000	0.5	0.979	0.5	0.964	0.9	0.975	0.9	1.010	1.0	1.014	0.8	0.986	1.0	0.943	1.6	0.853	1.9
1395	1.000	0.7	1.006	0.7	0.995	0.8	0.987	0.9	1.005	1.0	0.972	0.6	0.977	0.9	0.977	1.7	1.123	1.8
1400	1.000	0.8	0.995	0.6	1.000	0.5	1.002	0.9	1.033	0.8	1.023	0.5	0.980	1.0	0.952	1.5	0.924	1.8
1405	1.000	0.7	1.006	0.6	1.015	0.7	0.997	0.8	1.005	0.3	0.967	0.7	0.984	0.9	0.960	1.5	1.052	1.8
1410	1.000	0.5	1.006	0.4	0.998	0.8	0.996	0.7	0.994	0.9	1.001	0.6	1.004	1.1	1.007	1.4	0.955	1.8
1415	1.000	0.5	0.973	0.4	0.991	0.4	0.990	0.6	1.011	0.8	1.004	0.4	1.001	1.0	0.973	1.5	0.949	1.8
1420	1.000	0.6	0.986	0.5	0.991	0.7	0.980	0.6	0.991	1.0	0.967	0.6	0.975	0.4	0.961	1.4	0.974	1.8

TABLE 3b - *Continued*

SWP SENSITIVITY CHANGES - SMALL APERTURE

λ (Å)	t=1978.89		t=1979.84		t=1980.85		t=1981.81		t=1982.83		t=1983.98		t=1984.95		t=1985.82		t=1987.11	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
1425	1.000	0.6	0.980	0.5	0.997	0.7	0.994	0.5	0.980	0.9	0.980	0.5	0.983	0.8	0.962	1.5	0.919	1.8
1430	1.000	0.5	1.004	0.5	1.011	0.8	1.001	0.5	0.995	0.7	0.986	0.6	0.994	0.8	0.964	1.4	0.982	1.8
1435	1.000	0.6	1.006	0.4	1.011	0.8	1.010	0.6	0.972	0.8	0.978	0.4	0.960	0.8	0.946	1.4	0.941	1.8
1440	1.000	0.7	0.988	0.5	1.008	0.7	1.011	0.6	1.000	0.8	0.990	0.4	0.981	0.9	0.955	1.4	0.969	1.8
1445	1.000	0.5	0.983	0.5	0.996	0.6	0.982	0.5	0.978	0.8	0.977	0.5	0.971	1.0	0.968	1.4	0.950	1.8
1450	1.000	0.5	0.989	0.5	0.992	0.6	1.005	0.5	1.017	0.6	1.017	0.5	1.008	1.0	0.983	1.5	0.957	2.5
1455	1.000	0.6	0.990	0.5	0.963	0.8	0.966	0.5	0.974	0.7	0.943	0.5	0.945	1.0	0.937	1.4	0.916	1.8
1460	1.000	0.5	0.987	0.5	0.970	0.6	0.968	0.4	0.977	0.4	0.940	0.8	0.944	1.0	0.918	1.5	0.908	1.8
1465	1.000	0.6	0.977	0.6	0.982	0.5	0.968	0.7	0.961	1.0	0.944	0.8	0.939	1.0	0.940	1.4	0.924	1.9
1470	1.000	0.5	0.995	0.7	1.002	0.5	1.013	0.6	1.028	0.8	1.013	0.5	1.011	1.0	0.998	1.4	0.996	1.8
1475	1.000	0.4	0.989	0.4	0.995	0.7	0.983	0.6	0.980	0.8	0.979	0.4	0.973	0.8	0.961	1.5	0.956	1.8
1480	1.000	0.7	0.983	0.5	0.984	0.7	0.976	0.5	0.957	0.8	0.966	0.5	0.964	0.8	0.930	1.4	0.927	1.8
1485	1.000	0.6	1.000	0.6	0.993	0.6	0.992	0.6	0.985	0.8	0.991	0.4	0.978	0.8	0.965	1.4	0.977	1.8
1490	1.000	0.4	0.967	0.4	0.962	0.7	0.983	0.5	0.991	1.1	0.989	0.7	0.993	1.1	0.988	1.5	0.976	1.8
1495	1.000	0.5	0.969	0.4	0.953	0.6	0.956	0.4	0.961	0.7	0.952	0.6	0.937	0.8	0.913	1.6	0.907	1.8
1500	1.000	0.5	0.998	0.6	0.981	0.6	0.980	0.6	0.993	0.9	0.993	0.7	0.961	1.3	0.969	1.6	0.945	1.8
1505	1.000	0.5	0.989	0.4	0.983	0.5	0.963	0.7	0.973	0.7	0.970	0.8	0.980	1.0	0.965	1.4	0.985	1.8
1510	1.000	0.6	0.990	0.5	1.007	0.3	0.999	0.8	0.992	0.7	0.999	0.6	0.986	0.8	0.966	1.4	0.955	1.8
1515	1.000	0.5	0.992	0.6	0.979	0.5	0.981	0.6	0.977	0.9	0.971	0.6	0.962	0.9	0.949	1.5	0.948	1.8
1520	1.000	0.5	0.996	0.5	1.002	0.5	0.969	0.6	0.959	0.8	0.964	0.7	0.948	0.9	0.961	1.5	0.919	1.8
1525	1.000	0.8	0.975	0.6	0.973	0.8	0.969	0.8	0.968	1.1	0.982	0.6	0.964	0.9	0.947	1.4	0.899	1.8
1530	1.000	0.6	0.974	0.6	0.970	0.6	0.980	0.4	0.978	0.7	0.967	0.5	0.959	0.9	0.953	1.5	0.939	2.4
1535	1.000	0.6	0.979	0.5	0.998	0.6	0.983	0.6	0.974	0.5	0.950	0.7	0.964	0.9	0.958	1.4	1.008	1.8
1540	1.000	0.7	0.987	0.6	0.996	0.8	1.009	0.7	1.030	1.0	1.044	0.6	1.030	0.9	1.029	1.5	0.958	1.8
1545	1.000	0.8	0.968	0.7	0.978	1.1	0.975	0.9	1.020	1.3	1.007	0.9	0.997	1.3	0.996	1.7	0.911	3.3
1550	1.000	1.0	0.988	0.6	0.980	0.8	0.990	0.5	0.972	0.4	0.985	0.7	0.990	1.0	0.987	1.6	0.992	3.3
1555	1.000	0.7	1.001	0.7	0.984	0.7	0.966	0.8	0.927	0.9	0.921	0.5	0.904	0.7	0.928	1.6	0.933	3.3
1560	1.000	0.7	1.005	0.6	1.001	0.6	0.991	0.9	1.008	0.9	0.995	0.7	0.977	0.5	0.962	1.7	0.941	2.0
1565	1.000	0.6	1.031	0.6	1.011	0.7	1.000	0.6	0.997	0.9	0.988	0.7	0.995	1.0	0.989	1.4	0.992	1.8
1570	1.000	0.6	1.009	0.5	1.008	0.8	1.007	0.6	1.019	0.5	0.993	0.5	1.000	1.0	0.985	1.7	1.046	1.8
1575	1.000	0.6	1.026	0.5	1.002	0.6	0.999	0.4	1.008	0.9	1.004	0.5	0.996	0.6	0.995	1.4	0.995	1.8
1580	1.000	0.4	1.003	0.4	1.005	0.6	0.999	0.7	1.016	1.1	1.004	0.7	1.007	0.9	1.027	1.4	1.023	1.8
1585	1.000	0.5	0.989	0.6	0.961	0.6	0.953	0.5	0.973	1.0	0.996	0.7	1.006	1.0	1.015	1.4	1.002	1.8
1590	1.000	0.5	0.995	0.5	0.972	0.6	0.966	0.5	0.973	0.9	0.992	0.7	1.002	0.9	1.005	1.4	0.991	1.8
1595	1.000	0.7	1.017	0.5	1.025	0.7	0.997	0.6	0.976	0.7	0.994	0.7	0.997	0.8	1.009	1.4	0.992	1.8
1600	1.000	0.6	0.983	0.6	0.987	0.5	1.003	0.6	1.005	0.8	1.011	0.7	1.005	0.9	0.993	1.4	0.971	1.8
1605	1.000	0.5	1.015	0.6	1.014	0.5	1.018	0.6	1.022	0.9	1.016	0.7	1.009	0.9	1.023	1.4	0.964	1.8
1610	1.000	0.6	1.016	0.4	1.019	0.7	1.007	0.5	0.990	0.8	1.009	0.6	1.011	0.9	1.018	1.5	1.019	1.8
1615	1.000	0.4	1.007	0.5	1.008	0.5	1.027	0.5	1.024	0.9	1.021	0.6	1.027	1.0	1.031	1.5	1.061	1.8
1620	1.000	0.5	1.005	0.6	1.017	0.6	1.011	0.6	1.025	0.6	1.019	0.6	1.029	1.0	1.027	1.5	1.050	1.8
1625	1.000	0.5	1.019	0.5	1.027	0.5	1.034	0.5	1.011	0.7	1.036	0.7	1.028	1.0	1.022	1.4	1.030	1.8
1630	1.000	0.6	1.003	0.6	0.989	0.6	0.995	0.5	0.990	1.0	0.988	0.6	0.996	0.8	0.987	1.4	1.040	1.8
1635	1.000	0.5	1.000	0.5	1.003	0.7	0.999	0.7	1.014	0.6	1.010	0.4	1.022	0.5	1.034	1.5	1.041	1.8
1640	1.000	0.6	1.003	0.5	0.990	0.5	0.989	0.6	0.994	1.0	0.990	0.7	0.994	1.0	0.990	1.5	1.005	2.0
1645	1.000	0.5	1.019	0.4	1.021	0.5	1.013	0.5	1.029	0.6	1.016	0.4	1.011	0.8	0.999	1.5	1.050	1.8
1650	1.000	0.5	0.992	0.5	0.980	0.6	0.988	0.6	0.998	0.8	1.010	0.6	1.002	0.8	1.010	1.6	0.963	1.8
1655	1.000	0.5	0.984	0.5	1.010	0.6	1.014	0.6	1.005	0.8	1.008	0.5	1.004	0.8	1.007	1.5	0.968	2.1
1660	1.000	0.4	1.002	0.4	1.006	0.5	1.015	0.7	1.009	0.8	1.004	0.5	1.022	0.6	1.028	1.4	1.037	1.8
1665	1.000	0.4	0.987	0.4	1.000	0.5	1.013	0.7	1.024	0.6	1.031	0.5	1.025	0.8	1.053	1.4	1.047	1.8
1670	1.000	0.5	0.965	0.4	0.973	0.6	0.979	0.4	0.973	0.7	0.993	0.7	0.980	0.8	0.981	1.4	0.942	2.0
1675	1.000	0.5	0.988	0.5	1.001	0.5	0.999	0.8	0.998	1.0	0.973	0.5	0.980	0.8	0.996	1.4	1.049	2.0
1680	1.000	0.5	1.008	0.4	1.006	0.5	0.992	0.7	1.003	0.8	0.987	0.5	1.010	0.8	1.013	1.4	1.016	1.8
1685	1.000	0.4	0.994	0.4	0.991	0.5	0.988	0.4	0.981	0.7	0.991	0.6	0.996	0.7	0.991	1.5	0.953	1.8
1690	1.000	0.6	0.991	0.5	0.971	0.5	0.959	0.5	0.959	0.8	0.958	0.4	0.952	0.9	0.927	1.4	0.923	1.8
1695	1.000	0.4	0.998	0.4	0.990	0.7	0.980	0.4	0.977	0.6	0.969	0.5	0.949	0.9	0.952	1.4	0.946	1.8

TABLE 3b - *Continued*

SWP SENSITIVITY CHANGES - SMALL APERTURE

λ (Å)	t=1978.89		t=1979.84		t=1980.85		t=1981.81		t=1982.83		t=1983.98		t=1984.95		t=1985.82		t=1987.11	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
1700	1.000	0.5	1.004	0.4	1.002	0.3	0.987	0.4	0.990	0.5	0.987	0.5	0.979	0.6	0.976	1.6	0.990	1.8
1705	1.000	0.5	0.996	0.4	1.006	0.5	1.020	0.7	1.015	0.7	1.014	0.3	0.999	0.5	1.001	1.4	1.013	1.8
1710	1.000	0.5	1.009	0.5	1.021	0.6	1.017	0.4	1.017	0.5	1.014	0.5	1.020	0.5	1.003	1.4	1.014	1.8
1715	1.000	0.5	1.001	0.6	0.986	0.7	0.988	1.0	0.999	0.5	1.013	0.5	0.988	0.9	0.970	1.4	0.956	1.8
1720	1.000	0.5	1.006	0.7	0.983	1.0	0.977	0.6	0.984	0.8	0.979	0.5	0.997	0.6	0.977	1.4	0.962	1.8
1725	1.000	0.6	0.995	0.4	1.000	0.6	0.990	0.7	0.977	1.0	0.965	0.5	0.986	0.6	0.963	1.4	1.001	1.8
1730	1.000	0.5	0.986	0.3	0.968	0.6	0.961	0.5	0.965	0.9	0.943	0.5	0.944	0.8	0.934	1.4	0.957	1.8
1735	1.000	0.5	1.004	0.4	0.986	0.5	0.974	0.4	0.961	0.8	0.944	0.5	0.943	0.8	0.950	1.4	0.955	1.9
1740	1.000	0.4	0.999	0.4	0.969	0.5	0.973	0.5	0.968	0.6	0.955	0.3	0.953	0.8	0.942	1.5	0.945	1.8
1745	1.000	0.5	0.997	0.5	0.963	0.6	0.964	0.5	0.962	0.7	0.936	0.5	0.929	0.9	0.932	1.4	0.961	1.9
1750	1.000	0.5	0.980	0.4	0.968	0.5	0.973	0.5	0.951	0.7	0.945	0.5	0.906	0.9	0.926	1.4	0.933	1.8
1755	1.000	0.5	0.989	0.5	0.971	0.6	0.978	0.4	0.969	0.7	0.965	0.6	0.952	0.6	0.958	1.4	0.975	1.8
1760	1.000	0.4	0.978	0.5	0.967	0.5	0.956	0.4	0.949	0.8	0.950	0.5	0.930	0.8	0.908	1.4	0.909	1.8
1765	1.000	0.5	0.984	0.4	0.985	0.5	0.969	0.5	0.964	1.0	0.944	0.5	0.932	0.8	0.926	1.4	0.911	1.8
1770	1.000	0.5	0.978	0.5	0.977	0.5	0.975	0.4	0.970	0.8	0.957	0.3	0.949	0.7	0.938	1.4	0.954	1.8
1775	1.000	0.5	0.978	0.4	0.961	0.5	0.969	0.4	0.955	0.8	0.962	0.5	0.927	1.1	0.928	1.4	0.938	1.8
1780	1.000	0.5	0.983	0.5	0.959	0.5	0.966	0.4	0.951	0.8	0.953	0.5	0.932	0.9	0.924	1.4	0.939	2.0
1785	1.000	0.5	0.984	0.4	0.960	0.5	0.955	0.4	0.950	0.7	0.947	0.4	0.937	1.0	0.928	1.4	0.930	1.8
1790	1.000	0.4	0.983	0.4	0.970	0.5	0.965	0.4	0.946	0.6	0.956	0.5	0.937	0.9	0.935	1.5	0.935	1.8
1795	1.000	0.5	0.981	0.4	0.961	0.7	0.948	0.5	0.930	1.2	0.931	0.5	0.914	0.8	0.928	1.5	0.945	1.8
1800	1.000	0.5	0.979	0.4	0.954	0.6	0.960	0.3	0.947	0.8	0.945	0.4	0.930	1.0	0.917	1.4	0.947	1.9
1805	1.000	0.5	0.961	0.4	0.941	0.5	0.943	0.6	0.927	0.9	0.933	0.4	0.915	0.7	0.908	1.5	0.906	1.8
1810	1.000	0.5	0.980	0.4	0.956	0.5	0.936	0.5	0.933	0.8	0.934	0.4	0.916	0.7	0.906	1.4	0.921	1.8
1815	1.000	0.5	1.003	0.5	0.974	0.4	0.964	0.4	0.965	0.8	0.959	0.4	0.941	0.6	0.939	1.5	0.954	1.8
1820	1.000	0.5	0.986	0.5	0.965	0.5	0.957	0.4	0.956	1.2	0.947	0.4	0.926	0.9	0.929	1.4	0.948	1.8
1825	1.000	0.5	0.986	0.5	0.965	0.6	0.963	0.4	0.958	1.2	0.953	0.5	0.936	0.7	0.952	1.4	0.975	1.8
1830	1.000	0.5	0.987	0.5	0.961	0.5	0.959	0.5	0.961	1.2	0.958	0.4	0.954	0.8	0.954	1.4	0.983	1.8
1835	1.000	0.5	0.974	0.5	0.951	0.6	0.955	0.7	0.961	0.5	0.971	0.5	0.955	0.9	0.959	1.4	0.928	1.8
1840	1.000	0.6	0.971	0.5	0.954	0.8	0.956	0.6	0.956	0.9	0.969	0.6	0.955	0.7	0.942	1.4	0.927	1.8
1845	1.000	0.5	0.961	0.6	0.935	0.6	0.937	0.6	0.928	1.0	0.920	0.5	0.899	1.0	0.885	1.5	0.920	1.8
1850	1.000	0.6	0.959	0.6	0.947	0.5	0.948	0.7	0.946	1.1	0.936	0.6	0.904	0.8	0.910	1.4	0.903	1.8
1855	1.000	0.6	0.965	0.6	0.968	0.5	0.953	0.5	0.952	0.8	0.951	0.5	0.932	0.8	0.941	1.4	0.932	1.8
1860	1.000	0.6	0.973	0.5	0.966	0.8	0.954	0.6	0.953	0.9	0.945	0.6	0.927	0.9	0.929	1.4	0.938	1.8
1865	1.000	0.6	0.993	0.6	0.974	0.7	0.959	0.7	0.955	0.9	0.944	0.6	0.926	0.9	0.914	1.4	0.945	1.8
1870	1.000	0.5	0.962	0.7	0.947	0.8	0.945	0.7	0.949	1.1	0.941	0.6	0.920	0.9	0.925	1.6	0.881	2.4
1875	1.000	0.5	0.965	0.5	0.958	0.8	0.949	0.6	0.956	1.0	0.937	0.5	0.926	0.7	0.950	1.4	0.938	2.2
1880	1.000	0.5	0.968	0.6	0.956	0.9	0.945	0.8	0.953	1.1	0.945	0.7	0.923	0.8	0.929	1.4	0.929	2.0
1885	1.000	0.5	0.956	0.4	0.964	0.9	0.956	0.7	0.975	1.2	0.971	0.7	0.945	1.0	0.942	1.5	0.933	2.5
1890	1.000	0.7	0.959	0.6	0.946	0.9	0.925	0.6	0.948	1.2	0.941	0.7	0.924	0.5	0.917	1.5	0.922	2.4
1895	1.000	0.6	0.969	0.6	0.969	0.8	0.944	0.6	0.947	1.1	0.932	0.7	0.906	0.9	0.924	1.4	0.923	3.0
1900	1.000	0.6	0.977	0.5	0.978	0.8	0.967	0.6	0.974	1.2	0.957	0.6	0.926	0.9	0.933	1.5	0.940	3.6
1905	1.000	0.7	0.972	0.5	0.971	1.0	0.969	0.8	0.965	1.1	0.959	0.7	0.931	0.8	0.932	1.6	0.950	2.9
1910	1.000	0.7	0.966	0.6	0.960	0.9	0.956	0.8	0.961	1.2	0.963	0.8	0.939	0.8	0.920	1.5	0.932	2.7
1915	1.000	0.6	0.971	0.6	0.957	0.8	0.939	0.8	0.959	1.3	0.930	0.9	0.908	0.9	0.900	1.5	0.883	3.2
1920	1.000	0.5	0.970	0.6	0.953	0.7	0.938	0.6	0.942	1.2	0.921	0.6	0.902	0.8	0.894	1.4	0.896	3.3
1925	1.000	0.6	0.956	0.5	0.938	0.7	0.926	0.8	0.944	1.3	0.936	0.7	0.911	1.1	0.909	1.5	0.904	2.6
1930	1.000	0.7	0.973	0.5	0.956	0.6	0.938	0.8	0.910	1.2	0.909	0.8	0.898	1.0	0.902	1.4	0.904	3.1
1935	1.000	0.7	0.974	0.7	0.963	0.7	0.963	0.8	0.957	1.3	0.949	0.8	0.929	1.0	0.951	1.4	0.925	3.6
1940	1.000	0.7	0.970	0.6	0.951	0.9	0.956	0.6	0.953	1.3	0.945	0.6	0.915	1.0	0.920	1.4	0.900	2.8
1945	1.000	0.4	0.973	0.6	0.945	0.9	0.940	0.5	0.923	1.2	0.913	0.7	0.890	1.0	0.877	1.4	0.870	2.7
1950	1.000	0.6	0.959	0.5	0.949	0.6	0.944	0.8	0.939	1.3	0.930	0.7	0.905	0.9	0.887	1.5	0.876	2.8
1955	1.000	0.6	0.966	0.6	0.954	0.5	0.940	0.7	0.933	1.2	0.931	0.8	0.905	0.7	0.897	1.5	0.899	2.7
1960	1.000	0.6	0.972	0.5	0.973	0.9	0.952	0.6	0.944	1.3	0.932	0.7	0.900	0.9	0.908	1.4	0.913	2.7
1965	1.000	0.5	0.978	0.4	0.986	0.9	0.968	0.8	0.961	1.2	0.945	0.7	0.912	1.0	0.930	1.4	0.934	2.7
1970	1.000	0.6	0.984	0.4	0.959	0.8	0.948	0.8	0.940	1.4	0.936	0.8	0.905	1.0	0.920	1.4	0.911	2.7

TABLE 3c

SWP SENSITIVITY CHANGES - LARGE APERTURE

λ (Å)	t=1978.89		t=1979.87		t=1980.85		t=1981.80		t=1982.83		t=1983.91		t=1984.91		t=1985.86		t=1986.89	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
1150	1.000	1.4	0.993	1.2	1.007	1.9	1.017	0.7	0.985	0.9	0.925	1.1	0.904	1.0	0.882	1.0	0.877	1.2
1155	1.000	1.0	1.012	1.1	0.953	1.5	0.926	1.3	0.851	0.8	0.786	1.0	0.785	1.0	0.789	0.9	0.776	0.8
1160	1.000	0.9	1.004	0.7	0.990	1.3	0.929	1.2	0.889	0.8	0.831	0.8	0.822	0.8	0.830	0.8	0.814	0.9
1165	1.000	0.6	0.985	0.8	0.953	1.2	0.930	0.9	0.892	0.7	0.843	0.6	0.847	0.7	0.827	0.7	0.796	0.8
1170	1.000	0.7	0.994	0.6	0.970	1.0	0.961	0.7	0.919	0.5	0.858	0.7	0.851	0.6	0.837	0.8	0.804	0.7
1175	1.000	1.0	0.990	0.8	0.963	1.1	0.911	0.9	0.882	0.8	0.845	0.6	0.835	0.7	0.847	0.6	0.846	0.8
1180	1.000	0.9	1.006	0.5	1.000	1.0	0.959	0.9	0.931	0.6	0.879	0.7	0.901	0.5	0.880	0.7	0.870	0.7
1185	1.000	0.8	1.010	0.6	0.976	0.9	0.942	0.8	0.928	0.6	0.883	0.7	0.898	0.5	0.877	0.6	0.857	0.8
1190	1.000	0.9	1.010	0.7	0.988	0.8	0.945	1.1	0.908	0.8	0.879	0.6	0.901	0.6	0.890	0.6	0.868	0.7
1195	1.000	1.4	0.996	0.8	0.992	0.5	0.977	1.0	0.938	0.6	0.905	0.5	0.911	0.7	0.888	0.5	0.871	0.6
1200	1.000	0.7	1.014	0.7	1.025	0.7	1.008	1.2	0.975	0.4	0.919	0.5	0.927	0.7	0.903	0.6	0.915	0.5
1205	1.000	0.8	0.977	0.7	0.983	0.7	0.978	0.7	0.939	0.5	0.911	0.4	0.913	0.6	0.893	0.6	0.888	0.6
1210	1.000	2.1	0.994	2.0	0.990	1.7	0.988	2.5	0.987	1.6	0.996	0.5	0.971	1.1	0.897	1.2	0.829	1.8
1215	1.000	1.4	0.996	1.7	0.978	3.4	0.941	3.5	0.868	1.0	0.836	0.9	0.833	1.3	0.836	1.6	0.917	1.9
1220	1.000	2.1	1.001	0.8	1.017	2.3	0.959	2.9	0.950	1.0	0.876	1.6	0.907	1.3	0.928	1.4	0.968	1.4
1225	1.000	0.5	0.989	0.4	0.988	0.7	0.973	0.5	0.951	0.5	0.934	0.5	0.948	0.6	0.927	0.5	0.918	0.5
1230	1.000	0.4	0.985	0.5	0.975	0.5	0.956	0.5	0.928	0.5	0.913	0.4	0.921	0.5	0.913	0.4	0.915	0.5
1235	1.000	0.5	1.010	0.6	0.984	0.6	0.980	0.4	0.939	0.5	0.927	0.4	0.908	0.5	0.907	0.4	0.890	0.5
1240	1.000	0.5	1.000	0.6	1.000	0.7	0.977	0.4	0.940	0.4	0.923	0.4	0.924	0.4	0.913	0.5	0.930	0.5
1245	1.000	0.5	0.989	0.5	0.982	0.6	1.004	0.5	0.981	0.4	0.964	0.4	0.973	0.4	0.957	0.5	0.950	0.5
1250	1.000	0.5	0.996	0.4	0.990	0.4	0.982	0.4	0.959	0.4	0.952	0.4	0.963	0.4	0.965	0.3	0.948	0.4
1255	1.000	0.4	0.995	0.4	0.999	0.5	1.019	0.5	1.002	0.2	0.993	0.4	0.994	0.4	0.975	0.4	0.963	0.4
1260	1.000	0.4	1.023	0.5	1.035	0.5	1.017	0.5	1.003	0.3	0.975	0.4	0.990	0.4	0.989	0.5	0.981	0.5
1265	1.000	0.6	1.000	0.4	0.986	0.5	0.974	0.4	0.969	0.5	0.965	0.4	0.972	0.4	0.963	0.5	0.956	0.3
1270	1.000	0.4	0.994	0.4	0.985	0.4	0.987	0.4	0.953	0.5	0.952	0.3	0.974	0.3	0.953	0.4	0.946	0.4
1275	1.000	0.4	0.988	0.4	0.973	0.4	0.977	0.4	0.954	0.5	0.944	0.3	0.961	0.4	0.950	0.4	0.943	0.4
1280	1.000	0.4	0.987	0.4	0.992	0.4	1.010	0.5	0.985	0.5	0.961	0.4	0.966	0.3	0.954	0.4	0.949	0.4
1285	1.000	0.4	1.001	0.3	1.001	0.5	1.013	0.5	0.993	0.5	0.983	0.3	0.989	0.4	0.979	0.4	0.971	0.4
1290	1.000	0.4	0.995	0.4	0.980	0.4	1.030	0.5	1.006	0.4	1.004	0.4	1.015	0.4	0.997	0.5	0.977	0.6
1295	1.000	0.5	0.971	0.5	0.978	0.6	0.976	0.5	0.966	0.4	0.967	0.4	0.980	0.4	0.954	0.5	0.928	0.5
1300	1.000	0.4	1.007	0.5	1.013	0.4	0.998	0.5	0.987	0.3	0.983	0.4	0.989	0.4	0.967	0.4	0.949	0.5
1305	1.000	0.6	1.012	0.5	1.001	0.7	0.986	0.6	0.961	0.5	0.972	0.4	0.979	0.5	0.964	0.4	0.969	0.5
1310	1.000	0.5	0.988	0.5	0.989	0.4	0.979	0.7	0.961	0.5	0.940	0.4	0.963	0.4	0.954	0.4	0.955	0.5
1315	1.000	0.4	0.991	0.5	0.992	0.5	0.984	0.4	0.962	0.4	0.957	0.4	0.962	0.4	0.938	0.4	0.933	0.3
1320	1.000	0.4	0.970	0.5	0.974	0.6	0.994	0.5	0.974	0.5	0.960	0.4	0.968	0.5	0.932	0.4	0.926	0.4
1325	1.000	0.4	0.988	0.5	0.991	0.6	0.989	0.4	0.955	0.3	0.950	0.4	0.962	0.4	0.929	0.5	0.921	0.5
1330	1.000	0.5	0.963	0.5	0.971	0.6	0.992	0.6	0.968	0.4	0.965	0.4	0.969	0.4	0.938	0.6	0.906	0.5
1335	1.000	0.4	0.988	0.4	0.996	0.5	0.983	0.5	0.968	0.5	0.968	0.3	0.972	0.5	0.963	0.5	0.964	0.4
1340	1.000	0.5	0.983	0.4	0.980	0.4	0.968	0.5	0.955	0.5	0.946	0.4	0.953	0.3	0.948	0.4	0.934	0.5
1345	1.000	0.5	0.963	0.5	0.947	0.4	0.947	0.5	0.938	0.4	0.938	0.4	0.951	0.5	0.928	0.5	0.924	0.4
1350	1.000	0.3	0.978	0.4	0.989	0.5	0.979	0.4	0.958	0.4	0.949	0.4	0.966	0.4	0.952	0.4	0.934	0.2
1355	1.000	0.3	0.978	0.4	0.988	0.5	0.991	0.4	0.989	0.4	0.985	0.4	0.995	0.4	0.979	0.4	0.964	0.3
1360	1.000	0.5	0.972	0.5	0.997	0.5	1.006	0.5	0.985	0.4	0.973	0.5	0.988	0.5	0.954	0.5	0.937	0.4
1365	1.000	0.5	0.973	0.5	0.979	0.4	0.967	0.5	0.960	0.5	0.944	0.4	0.971	0.4	0.953	0.5	0.942	0.4
1370	1.000	0.4	0.986	0.5	0.995	0.5	1.011	0.5	0.964	0.4	0.952	0.4	0.954	0.4	0.931	0.5	0.919	0.5
1375	1.000	0.4	0.980	0.4	0.987	0.3	0.971	0.4	0.960	0.4	0.954	0.3	0.956	0.4	0.929	0.5	0.933	0.5
1380	1.000	0.4	0.950	0.5	0.948	0.5	0.939	0.4	0.942	0.4	0.937	0.3	0.939	0.4	0.931	0.4	0.921	0.4
1385	1.000	0.5	0.974	0.5	0.976	0.5	0.979	0.5	0.962	0.4	0.949	0.4	0.949	0.5	0.922	0.5	0.914	0.5
1390	1.000	0.5	0.956	0.6	0.953	0.7	0.978	0.6	0.961	0.5	0.949	0.4	0.953	0.5	0.926	0.5	0.896	0.5
1395	1.000	0.5	0.994	0.4	1.005	0.5	0.985	0.6	0.968	0.4	0.941	0.4	0.947	0.4	0.940	0.4	0.940	0.4
1400	1.000	0.5	0.956	0.4	0.946	0.5	0.943	0.5	0.929	0.5	0.922	0.5	0.929	0.4	0.895	0.5	0.889	0.4
1405	1.000	0.6	0.990	0.4	0.997	0.4	0.970	0.5	0.971	0.4	0.948	0.5	0.964	0.4	0.944	0.5	0.945	0.4
1410	1.000	0.4	0.959	0.5	0.965	0.4	0.985	0.6	0.971	0.4	0.947	0.4	0.951	0.5	0.941	0.6	0.928	0.5
1415	1.000	0.5	0.967	0.4	0.972	0.4	0.965	0.5	0.950	0.4	0.947	0.4	0.953	0.4	0.938	0.4	0.916	0.4
1420	1.000	0.4	0.981	0.4	0.990	0.5	0.959	0.6	0.937	0.4	0.924	0.5	0.928	0.4	0.909	0.5	0.900	0.4

TABLE 3c - *Continued*

SWP SENSITIVITY CHANGES - LARGE APERTURE

λ (Å)	t=1978.89		t=1979.87		t=1980.85		t=1981.80		t=1982.83		t=1983.91		t=1984.91		t=1985.86		t=1986.89	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
1425	1.000	0.4	0.954	0.5	0.976	0.5	0.981	0.5	0.975	0.4	0.958	0.4	0.957	0.5	0.940	0.5	0.921	0.4
1430	1.000	0.5	0.982	0.5	0.967	0.5	0.962	0.5	0.944	0.4	0.916	0.4	0.916	0.5	0.901	0.4	0.904	0.4
1435	1.000	0.4	0.994	0.4	0.989	0.4	0.971	0.4	0.956	0.5	0.941	0.4	0.941	0.4	0.938	0.5	0.917	0.4
1440	1.000	0.5	0.980	0.4	0.966	0.4	0.954	0.5	0.936	0.4	0.928	0.4	0.927	0.5	0.912	0.6	0.905	0.4
1445	1.000	0.5	0.965	0.6	0.958	0.4	0.957	0.5	0.934	0.3	0.931	0.4	0.938	0.3	0.925	0.4	0.914	0.5
1450	1.000	0.4	0.948	0.5	0.962	0.4	0.962	0.5	0.963	0.6	0.959	0.4	0.967	0.4	0.942	0.4	0.938	0.4
1455	1.000	0.4	0.940	0.4	0.939	0.4	0.955	0.5	0.936	0.4	0.924	0.4	0.933	0.5	0.917	0.5	0.919	0.5
1460	1.000	0.4	0.966	0.4	0.965	0.5	0.957	0.4	0.937	0.5	0.934	0.4	0.946	0.4	0.940	0.5	0.926	0.4
1465	1.000	0.4	0.981	0.5	0.972	0.4	0.963	0.4	0.956	0.4	0.940	0.4	0.949	0.5	0.946	0.5	0.928	0.5
1470	1.000	0.5	0.957	0.5	0.958	0.5	0.963	0.5	0.964	0.4	0.949	0.4	0.961	0.3	0.951	0.4	0.945	0.5
1475	1.000	0.4	0.953	0.5	0.955	0.5	0.969	0.6	0.957	0.4	0.951	0.3	0.951	0.4	0.933	0.4	0.919	0.4
1480	1.000	0.4	0.947	0.6	0.946	0.5	0.938	0.4	0.948	0.5	0.934	0.3	0.938	0.5	0.932	0.4	0.909	0.4
1485	1.000	0.4	0.951	0.5	0.941	0.5	0.923	0.4	0.924	0.5	0.904	0.4	0.916	0.5	0.905	0.4	0.893	0.4
1490	1.000	0.4	0.983	0.4	0.956	0.5	0.950	0.5	0.935	0.5	0.913	0.4	0.921	0.4	0.918	0.5	0.899	0.4
1495	1.000	0.4	0.976	0.5	0.958	0.5	0.974	0.5	0.938	0.5	0.923	0.4	0.928	0.4	0.915	0.4	0.909	0.4
1500	1.000	0.4	0.969	0.4	0.961	0.5	0.977	0.5	0.950	0.4	0.957	0.4	0.961	0.5	0.932	0.5	0.923	0.4
1505	1.000	0.4	0.997	0.5	1.014	0.5	1.003	0.5	1.000	0.4	0.973	0.4	0.970	0.4	0.964	0.4	0.945	0.4
1510	1.000	0.5	0.960	0.4	0.970	0.5	0.972	0.5	0.981	0.5	0.963	0.4	0.968	0.4	0.938	0.5	0.926	0.4
1515	1.000	0.5	0.962	0.5	0.944	0.4	0.924	0.6	0.904	0.5	0.891	0.5	0.910	0.4	0.900	0.6	0.885	0.5
1520	1.000	0.4	0.989	0.5	0.980	0.6	0.979	0.5	0.979	0.5	0.970	0.5	0.985	0.5	0.975	0.6	0.955	0.5
1525	1.000	0.5	0.951	0.6	0.950	0.5	0.960	0.6	0.960	0.5	0.937	0.4	0.935	0.4	0.912	0.5	0.890	0.4
1530	1.000	0.5	0.966	0.4	0.964	0.5	0.965	0.6	0.964	0.4	0.963	0.5	0.959	0.5	0.949	0.4	0.940	0.5
1535	1.000	0.6	0.969	0.5	0.971	0.5	0.969	0.5	0.963	0.4	0.962	0.4	0.980	0.4	0.967	0.5	0.965	0.4
1540	1.000	0.5	0.992	0.5	0.970	0.4	0.975	0.5	0.966	0.5	0.972	0.5	0.970	0.5	0.969	0.5	0.956	0.5
1545	1.000	0.6	0.990	0.5	0.968	0.6	0.966	0.7	0.966	0.5	0.962	0.4	0.957	0.6	0.936	0.6	0.927	0.4
1550	1.000	0.6	1.011	0.5	1.019	0.6	1.009	0.7	1.009	0.5	0.984	0.4	0.989	0.5	0.978	0.5	0.996	0.5
1555	1.000	0.7	1.001	0.5	0.995	0.6	0.996	0.7	1.009	0.6	0.990	0.4	1.004	0.5	0.983	0.5	0.979	0.5
1560	1.000	0.5	0.981	0.6	0.985	0.7	0.990	0.6	1.000	0.5	0.991	0.4	1.004	0.5	0.984	0.5	0.970	0.4
1565	1.000	0.5	1.016	0.4	1.021	0.5	1.015	0.5	1.015	0.5	1.007	0.5	1.038	0.4	1.026	0.5	1.017	0.5
1570	1.000	0.6	1.005	0.5	1.013	0.5	1.003	0.4	0.986	0.5	0.973	0.4	0.988	0.5	0.972	0.4	0.972	0.6
1575	1.000	0.5	0.987	0.4	0.984	0.5	0.998	0.5	0.975	0.5	0.968	0.4	0.968	0.6	0.962	0.5	0.961	0.5
1580	1.000	0.5	0.998	0.5	1.001	0.6	0.998	0.5	1.017	0.5	1.008	0.5	1.013	0.5	1.003	0.6	1.007	0.5
1585	1.000	0.4	0.995	0.5	0.988	0.5	1.003	0.5	1.010	0.4	0.996	0.5	0.998	0.5	0.995	0.5	0.985	0.4
1590	1.000	0.5	0.991	0.4	0.975	0.6	0.972	0.6	0.976	0.5	0.962	0.4	0.977	0.4	0.954	0.5	0.954	0.4
1595	1.000	0.5	0.987	0.5	0.972	0.5	0.978	0.5	0.975	0.5	0.969	0.5	0.987	0.4	0.976	0.5	0.969	0.4
1600	1.000	0.5	0.967	0.5	0.951	0.5	0.963	0.5	0.963	0.6	0.947	0.4	0.965	0.5	0.941	0.4	0.941	0.4
1605	1.000	0.6	0.963	0.6	0.965	0.6	0.973	0.4	0.956	0.5	0.947	0.4	0.969	0.5	0.948	0.6	0.944	0.5
1610	1.000	0.6	0.966	0.5	0.960	0.6	0.975	0.4	0.957	0.4	0.950	0.4	0.961	0.5	0.946	0.5	0.957	0.5
1615	1.000	0.6	1.013	0.5	1.004	0.5	0.978	0.6	0.975	0.6	0.969	0.5	0.989	0.5	0.973	0.5	0.959	0.5
1620	1.000	0.6	1.000	0.4	1.002	0.6	1.018	0.5	1.020	0.6	1.000	0.4	1.033	0.5	1.016	0.6	1.003	0.5
1625	1.000	0.5	0.997	0.4	1.003	0.6	1.023	0.5	1.015	0.5	0.978	0.5	0.992	0.4	0.978	0.5	0.981	0.4
1630	1.000	0.5	1.009	0.5	0.997	0.5	0.998	0.4	0.988	0.4	0.980	0.4	0.985	0.5	0.968	0.6	0.962	0.4
1635	1.000	0.6	0.994	0.5	1.011	0.6	1.021	0.5	1.032	0.5	1.032	0.4	1.048	0.5	1.038	0.6	1.021	0.5
1640	1.000	0.5	0.976	0.4	0.975	0.5	0.958	0.4	0.970	0.4	0.967	0.5	0.980	0.4	0.969	0.6	0.956	0.5
1645	1.000	0.5	0.993	0.5	0.992	0.6	0.983	0.5	0.950	0.4	0.931	0.5	0.952	0.4	0.942	0.5	0.951	0.5
1650	1.000	0.5	0.985	0.4	0.999	0.5	1.004	0.5	0.988	0.5	0.960	0.4	0.968	0.5	0.959	0.5	0.948	0.5
1655	1.000	0.5	0.989	0.5	0.973	0.4	0.982	0.4	0.974	0.4	0.975	0.5	0.976	0.4	0.969	0.6	0.956	0.4
1660	1.000	0.5	0.982	0.4	0.981	0.5	0.971	0.5	0.981	0.5	0.960	0.4	0.978	0.4	0.972	0.5	0.977	0.4
1665	1.000	0.5	0.985	0.5	0.999	0.5	1.020	0.6	1.020	0.5	1.013	0.4	1.025	0.5	0.997	0.4	0.997	0.4
1670	1.000	0.5	0.991	0.4	0.993	0.4	0.980	0.4	0.988	0.5	0.977	0.4	0.990	0.4	0.969	0.5	0.967	0.5
1675	1.000	0.6	0.992	0.5	1.007	0.5	0.991	0.6	0.993	0.5	0.979	0.4	0.986	0.6	0.967	0.4	0.978	0.4
1680	1.000	0.5	1.007	0.4	1.009	0.4	1.020	0.6	1.011	0.4	0.993	0.4	1.008	0.4	0.985	0.4	0.984	0.4
1685	1.000	0.5	1.017	0.4	1.007	0.5	1.020	0.4	1.021	0.4	1.013	0.4	1.024	0.4	1.006	0.5	0.990	0.4
1690	1.000	0.5	0.984	0.4	0.985	0.5	0.989	0.4	0.976	0.4	0.972	0.4	0.981	0.4	0.960	0.5	0.950	0.4
1695	1.000	0.4	0.978	0.4	0.976	0.5	0.961	0.5	0.947	0.4	0.936	0.4	0.946	0.5	0.941	0.4	0.921	0.4

TABLE 3c - *Continued*

SWP SENSITIVITY CHANGES - LARGE APERTURE

λ (Å)	t=1978.89		t=1979.87		t=1980.85		t=1981.80		t=1982.83		t=1983.91		t=1984.91		t=1985.86		t=1986.89	
	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)	f(t)	σ(%)
1700	1.000	0.4	0.993	0.5	0.984	0.5	0.982	0.4	0.991	0.5	0.969	0.4	0.970	0.3	0.967	0.5	0.961	0.4
1705	1.000	0.5	0.970	0.4	0.974	0.4	0.977	0.5	0.970	0.4	0.963	0.4	0.969	0.4	0.959	0.4	0.947	0.4
1710	1.000	0.4	0.989	0.4	0.991	0.5	0.986	0.6	0.977	0.3	0.977	0.4	0.989	0.4	0.968	0.4	0.964	0.4
1715	1.000	0.4	0.978	0.5	0.984	0.5	0.998	0.5	0.995	0.5	0.987	0.5	0.993	0.4	0.968	0.5	0.949	0.5
1720	1.000	0.5	0.978	0.4	0.959	0.5	0.957	0.5	0.950	0.6	0.932	0.5	0.942	0.5	0.924	0.5	0.919	0.4
1725	1.000	0.6	0.993	0.5	0.988	0.6	0.975	0.4	0.981	0.5	0.944	0.4	0.952	0.4	0.941	0.5	0.942	0.4
1730	1.000	0.5	0.982	0.4	0.963	0.4	0.951	0.5	0.944	0.4	0.915	0.4	0.927	0.5	0.915	0.5	0.909	0.5
1735	1.000	0.4	0.978	0.4	0.974	0.5	0.972	0.5	0.966	0.5	0.952	0.4	0.955	0.4	0.947	0.4	0.943	0.4
1740	1.000	0.4	0.967	0.5	0.962	0.5	0.974	0.5	0.964	0.4	0.947	0.3	0.952	0.3	0.950	0.3	0.928	0.3
1745	1.000	0.5	0.983	0.4	0.975	0.4	0.955	0.5	0.951	0.4	0.934	0.4	0.947	0.3	0.921	0.6	0.913	0.4
1750	1.000	0.4	0.993	0.4	1.008	0.5	0.991	0.5	0.983	0.4	0.968	0.3	0.972	0.4	0.957	0.5	0.953	0.4
1755	1.000	0.4	0.974	0.4	0.963	0.3	0.959	0.5	0.960	0.4	0.944	0.4	0.950	0.4	0.943	0.5	0.937	0.4
1760	1.000	0.4	0.963	0.4	0.952	0.3	0.938	0.4	0.920	0.4	0.918	0.3	0.924	0.3	0.909	0.4	0.896	0.3
1765	1.000	0.4	0.966	0.4	0.953	0.4	0.960	0.6	0.945	0.3	0.926	0.4	0.933	0.3	0.914	0.4	0.908	0.3
1770	1.000	0.5	0.952	0.4	0.930	0.4	0.932	0.4	0.919	0.5	0.907	0.4	0.907	0.4	0.895	0.5	0.878	0.3
1775	1.000	0.5	0.958	0.4	0.957	0.4	0.958	0.4	0.952	0.4	0.938	0.4	0.954	0.4	0.934	0.4	0.931	0.4
1780	1.000	0.5	0.966	0.4	0.977	0.4	0.991	0.5	0.971	0.4	0.972	0.4	0.984	0.3	0.973	0.4	0.952	0.4
1785	1.000	0.4	0.961	0.4	0.950	0.4	0.955	0.5	0.961	0.4	0.960	0.3	0.963	0.4	0.953	0.4	0.937	0.4
1790	1.000	0.4	0.962	0.3	0.956	0.4	0.940	0.4	0.935	0.4	0.930	0.3	0.939	0.3	0.933	0.4	0.921	0.4
1795	1.000	0.4	0.957	0.3	0.935	0.5	0.920	0.5	0.930	0.4	0.917	0.3	0.929	0.3	0.928	0.4	0.913	0.4
1800	1.000	0.4	0.965	0.4	0.971	0.4	0.968	0.5	0.948	0.4	0.938	0.4	0.945	0.4	0.943	0.4	0.927	0.4
1805	1.000	0.4	0.976	0.3	0.964	0.4	0.961	0.5	0.947	0.4	0.942	0.3	0.944	0.3	0.924	0.4	0.909	0.3
1810	1.000	0.4	0.969	0.3	0.952	0.4	0.956	0.4	0.940	0.4	0.934	0.3	0.934	0.3	0.921	0.4	0.912	0.3
1815	1.000	0.5	0.968	0.3	0.946	0.5	0.933	0.5	0.926	0.4	0.904	0.3	0.915	0.4	0.903	0.5	0.894	0.3
1820	1.000	0.4	0.960	0.4	0.945	0.4	0.932	0.5	0.910	0.4	0.902	0.4	0.903	0.3	0.886	0.4	0.872	0.3
1825	1.000	0.4	0.966	0.4	0.974	0.4	0.987	0.5	0.978	0.4	0.956	0.3	0.950	0.4	0.937	0.4	0.930	0.4
1830	1.000	0.4	0.969	0.4	0.965	0.4	0.959	0.5	0.959	0.3	0.949	0.3	0.955	0.4	0.943	0.4	0.929	0.3
1835	1.000	0.4	0.965	0.4	0.976	0.4	0.971	0.4	0.958	0.3	0.942	0.3	0.950	0.4	0.926	0.4	0.915	0.3
1840	1.000	0.4	0.963	0.5	0.967	0.4	0.962	0.4	0.959	0.4	0.949	0.3	0.949	0.4	0.918	0.4	0.908	0.4
1845	1.000	0.5	0.971	0.4	0.961	0.4	0.952	0.5	0.948	0.4	0.933	0.3	0.935	0.4	0.920	0.5	0.920	0.4
1850	1.000	0.5	0.976	0.5	0.979	0.5	0.967	0.5	0.963	0.3	0.950	0.3	0.954	0.3	0.928	0.5	0.918	0.3
1855	1.000	0.5	0.984	0.4	0.973	0.5	0.957	0.5	0.951	0.4	0.944	0.4	0.942	0.3	0.931	0.4	0.922	0.3
1860	1.000	0.5	0.971	0.4	0.953	0.4	0.948	0.3	0.941	0.3	0.934	0.4	0.941	0.4	0.927	0.5	0.914	0.3
1865	1.000	0.4	0.970	0.4	0.960	0.4	0.934	0.4	0.933	0.4	0.922	0.4	0.924	0.4	0.914	0.3	0.903	0.4
1870	1.000	0.4	0.950	0.4	0.948	0.4	0.957	0.5	0.945	0.4	0.924	0.3	0.934	0.4	0.892	0.3	0.887	0.4
1875	1.000	0.4	0.959	0.4	0.955	0.4	0.951	0.4	0.948	0.4	0.939	0.3	0.946	0.4	0.928	0.4	0.904	0.4
1880	1.000	0.4	0.971	0.4	0.950	0.3	0.948	0.4	0.939	0.3	0.924	0.4	0.930	0.4	0.905	0.4	0.885	0.3
1885	1.000	0.4	0.972	0.4	0.965	0.3	0.964	0.5	0.955	0.4	0.955	0.3	0.957	0.4	0.927	0.4	0.913	0.4
1890	1.000	0.5	0.968	0.5	0.966	0.4	0.954	0.5	0.935	0.4	0.927	0.3	0.931	0.4	0.903	0.5	0.895	0.4
1895	1.000	0.4	0.966	0.5	0.965	0.5	0.952	0.5	0.941	0.4	0.924	0.4	0.928	0.4	0.905	0.4	0.902	0.4
1900	1.000	0.5	0.958	0.5	0.955	0.5	0.963	0.4	0.956	0.5	0.943	0.4	0.954	0.4	0.926	0.4	0.915	0.4
1905	1.000	0.5	0.975	0.4	0.959	0.4	0.951	0.5	0.931	0.5	0.938	0.4	0.941	0.3	0.934	0.4	0.916	0.4
1910	1.000	0.5	0.983	0.4	0.967	0.4	0.958	0.4	0.939	0.4	0.932	0.3	0.935	0.3	0.914	0.5	0.899	0.4
1915	1.000	0.4	0.976	0.4	0.962	0.4	0.961	0.5	0.946	0.4	0.935	0.3	0.934	0.4	0.911	0.4	0.894	0.4
1920	1.000	0.4	0.978	0.4	0.951	0.4	0.919	0.4	0.914	0.4	0.913	0.3	0.911	0.3	0.896	0.4	0.876	0.3
1925	1.000	0.4	0.973	0.4	0.948	0.4	0.906	0.5	0.891	0.4	0.889	0.3	0.887	0.3	0.874	0.4	0.853	0.4
1930	1.000	0.4	0.976	0.3	0.953	0.4	0.916	0.4	0.902	0.5	0.883	0.4	0.885	0.3	0.879	0.4	0.869	0.4
1935	1.000	0.4	0.978	0.4	0.967	0.4	0.967	0.3	0.954	0.3	0.928	0.4	0.926	0.4	0.910	0.4	0.900	0.4
1940	1.000	0.4	0.980	0.4	0.975	0.3	0.975	0.4	0.943	0.3	0.932	0.4	0.929	0.4	0.914	0.4	0.899	0.3
1945	1.000	0.4	0.969	0.4	0.963	0.3	0.962	0.5	0.941	0.4	0.933	0.4	0.934	0.4	0.908	0.4	0.902	0.4
1950	1.000	0.3	0.983	0.4	0.964	0.4	0.954	0.5	0.937	0.4	0.931	0.5	0.931	0.4	0.908	0.4	0.897	0.4
1955	1.000	0.4	1.010	0.4	0.977	0.5	0.960	0.5	0.940	0.4	0.918	0.3	0.907	0.4	0.888	0.4	0.893	0.4
1960	1.000	0.5	1.043	0.4	1.011	0.3	0.987	0.5	0.977	0.4	0.950	0.3	0.952	0.3	0.940	0.4	0.929	0.4
1965	1.000	0.7	1.054	0.9	0.968	0.6	0.937	0.5	0.934	0.5	0.932	0.4	0.932	0.4	0.922	0.4	0.903	0.4
1970	1.000	0.6	1.091	1.1	0.982	0.7	0.934	0.5	0.931	0.5	0.909	0.4	0.916	0.4	0.905	0.4	0.890	0.4

TABLE 4

RATIO[a] OF CORRECTED LWR DATA TO THE INITIAL YEAR

Epoch[b]	N[c]	No Corr.	Clavel Correction				Correction from This Work			
			Worst *	σ(%)	Mean	σ (%)	Worst *	σ (%)	Mean	σ (%)
1979.36	55	0.980	0.987	2.2	0.996	2.2	0.991	1.7	0.999	1.1
1981.36	67	0.955	1.023	3.5	1.001	2.3	1.021	2.2	0.999	1.3
1983.36	68	0.909	0.970	2.7	0.983	3.0	0.989	2.3	0.996	1.5
1985.36	58	0.878	0.959	3.8	0.982	3.5	1.028	2.2	1.008	1.5

[a]The initial year is 1978.36–1979.36 and the wavelength interval is 1925–3200Å.

[b]Beginning date for a one year period.

[c]Number of spectra that are trailed (T) or point sources in the large aperture (L). Small aperture spectra are used only after normalizing to the mean T+L spectrum in the 2600–2775Å range.

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FIGURE CAPTIONS

Fig. 1—LWR sensitivity changes in sample 5Å bins for the mean of all five standard stars for point sources in the large aperture. The points at 2005, 2370, and 2800Å are typical of their local regions. The 2270–2275Å pair are chosen to illustrate a larger than normal decrease. The 2475–2480Å points are a pair with large contrast in behavior as a function of time. The 3175Å point has a large increase in sensitivity, while the neighbor at 3180Å decreases. The error bars are the formal errors in the mean from Table 2.

Fig. 2—Uncorrected mean ratios of the standard stars to their baseline fluxes in 5Å bins from the 1978.36–1979.36 period. See Table 4 for a summary of the average values of the ratios for LWR.

Fig. 3—Mean ratios corrected with our technique for the same data as in Fig. 2. Most of the larger glitches are caused by the bright spot near 2200Å and the large aperture reseaux at 1855, 2055, 2580, and 2785Å.

Fig. 4—Mean ratios corrected with the CGP algorithm for the same data as in Figs. 2 and 3.

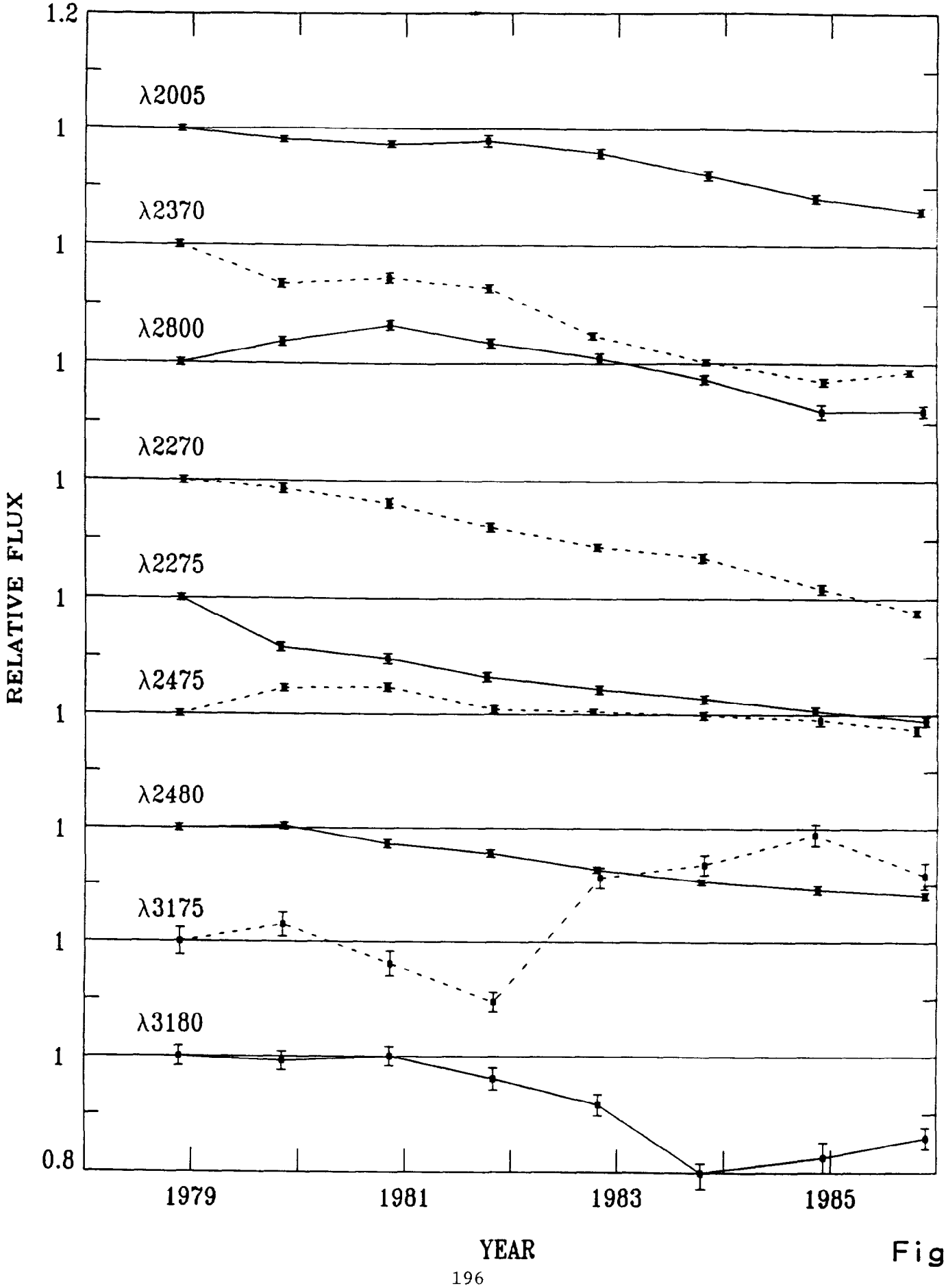
1.2
λ2005
1
λ2370
1
λ2800
1
λ2270
1
λ2275
1
λ2475
1
λ2480
1
λ3175
1
λ3180
1
0.8
RELATIVE FLUX
1979
1981
1983
1985
YEAR

Fig. 1

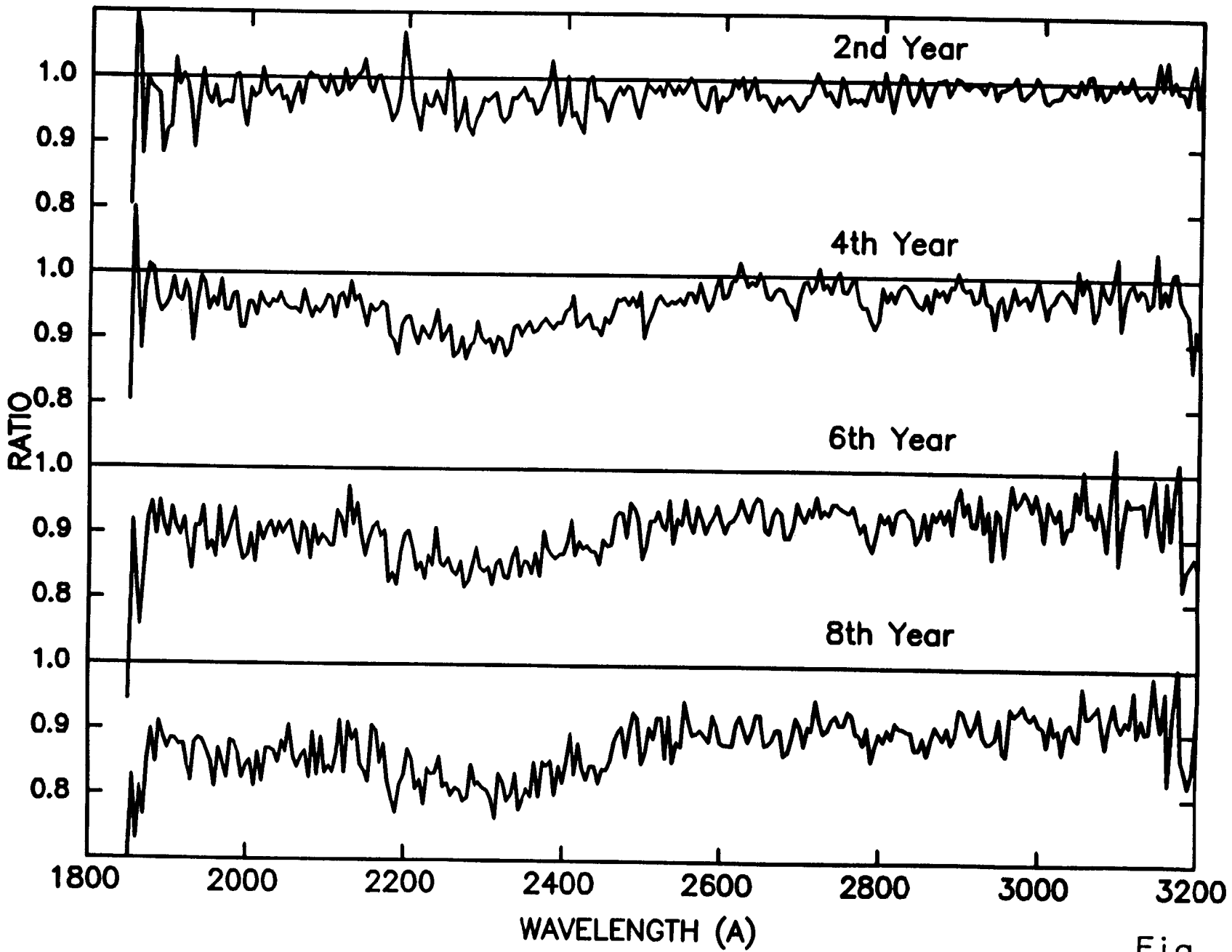
2nd Year
4th Year
6th Year
8th Year
RATIO
1.0
0.9
0.8
1800
2000
2200
2400
2600
2800
3000
3200
WAVELENGTH (A)

Fig. 2

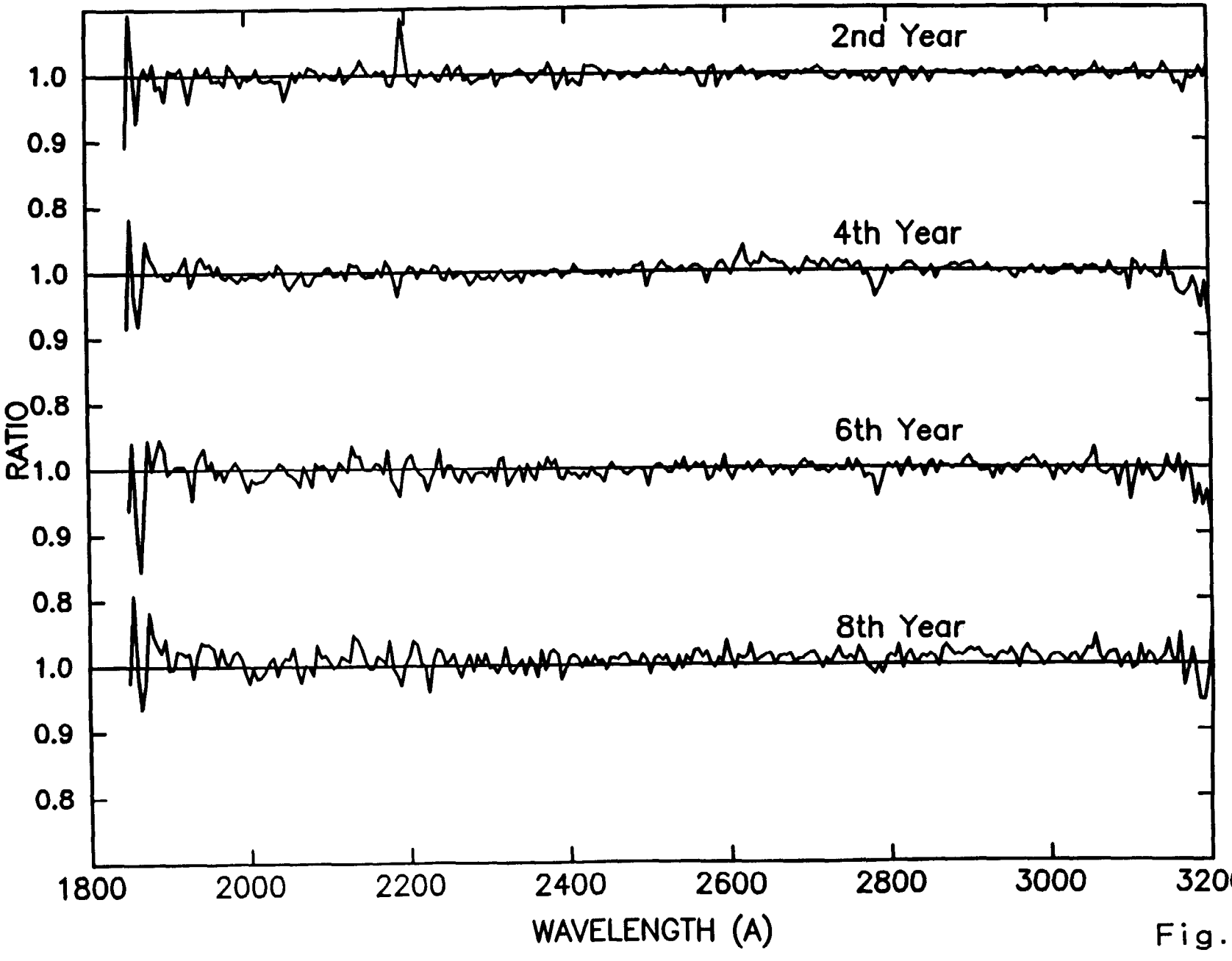
2nd Year
4th Year
6th Year
8th Year
RATIO
1.0
0.9
0.8
1800
2000
2200
2400
2600
2800
3000
3200
WAVELENGTH (A)

Fig. 3

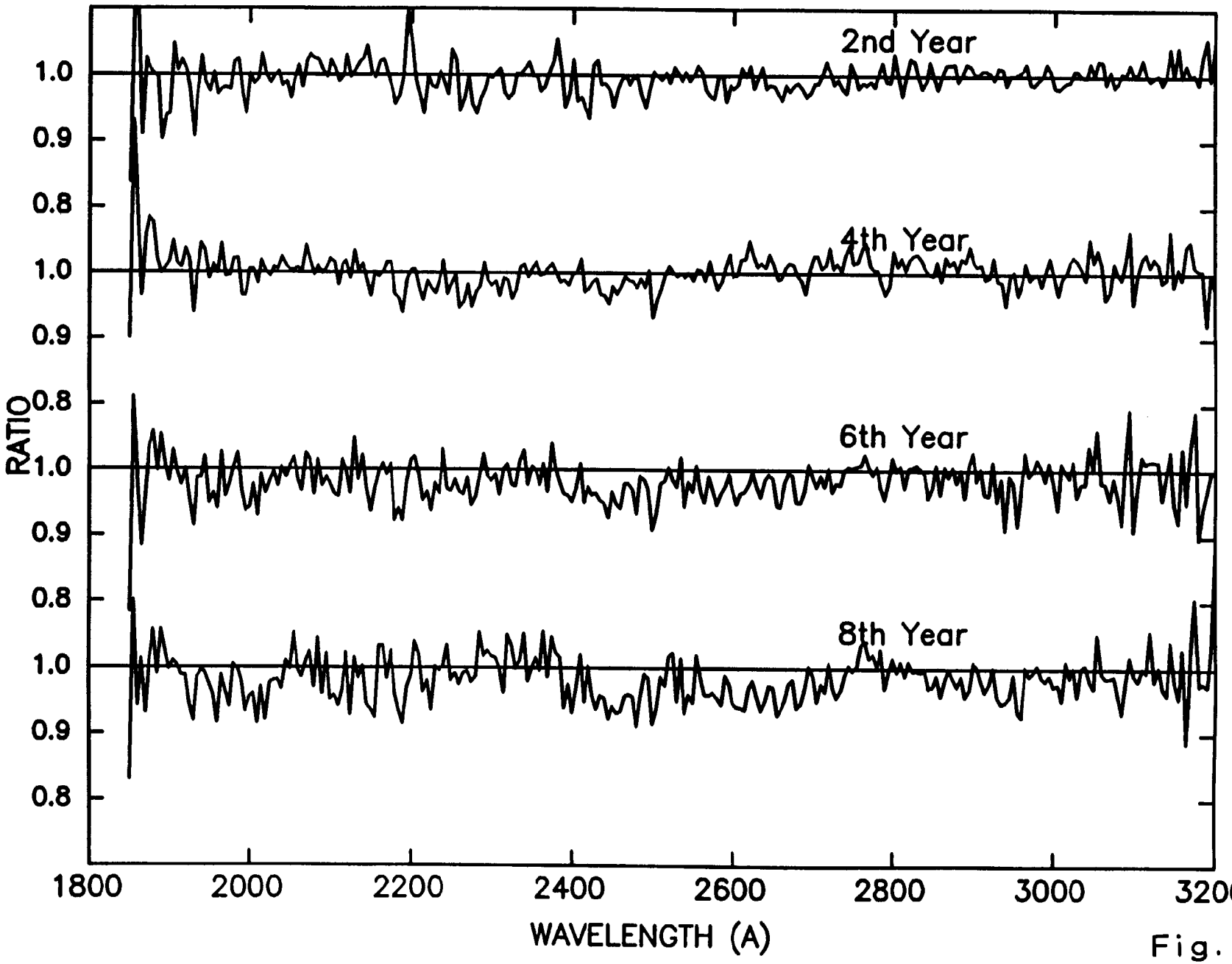
2nd Year
4th Year
6th Year
8th Year
RATIO
1.0
0.9
0.8
1800
2000
2200
2400
2600
2800
3000
3200
WAVELENGTH (A)

Fig. 4