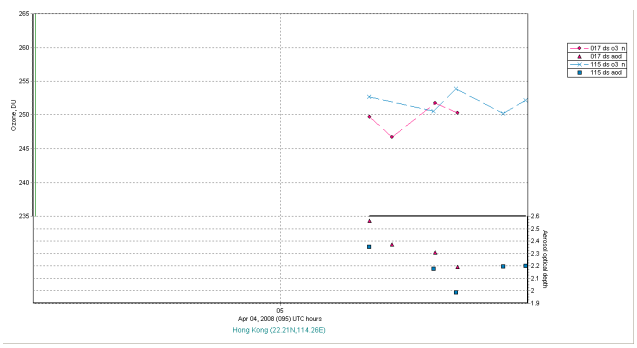
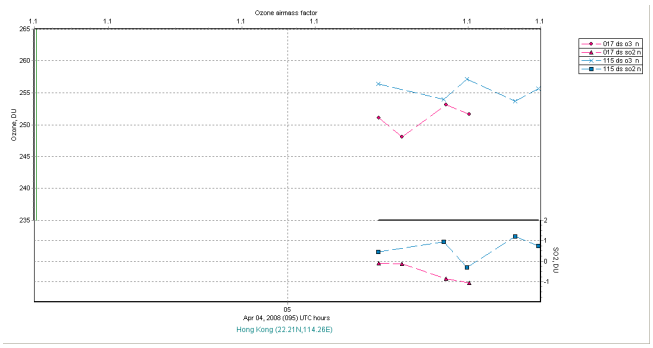
Hong Kong Brewer #115 Calibration and Service Report – April 2008

Int'l Ozone Services (IOS) completed the annual calibration and service of Hong Kong Brewer #115 during the period of April 1-4, 2008. In the past year the standard lamp (SL) ratios had decreased about 1% (-15/-45), to values of 1705/3155, reference graph at bottom of this page. The weather did not co-operate this year and only a few ozone measurements were possible on the last day. Fortunately these measurements were near noon, which is important to verify the instrument's extra-terrestrial (ETC) constants.

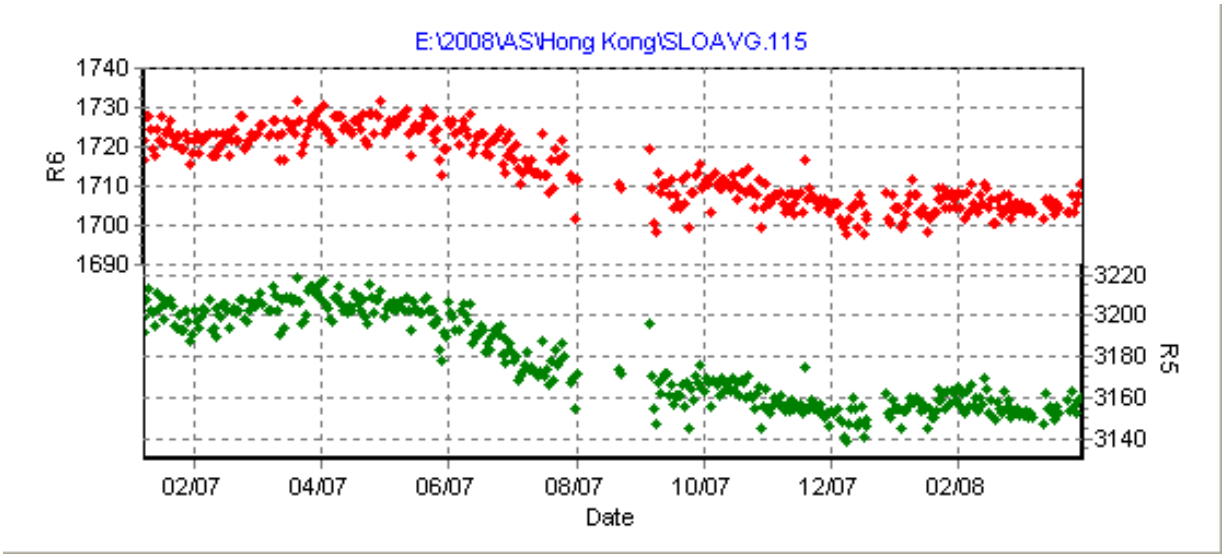
Ozone calibration results:

Below are the limited ozone/AOD direct sun results from #115 using 2007 recommended ETC constants of 2938/2858 and traveling standard #017 near noon on last day of this visit. To obtain these few results through cloud cover, the standard deviation had to be increased to 5 from 2.5. The next graph shows the same results after applying SL corrections, for #115 the constants were set to 2923/2805.



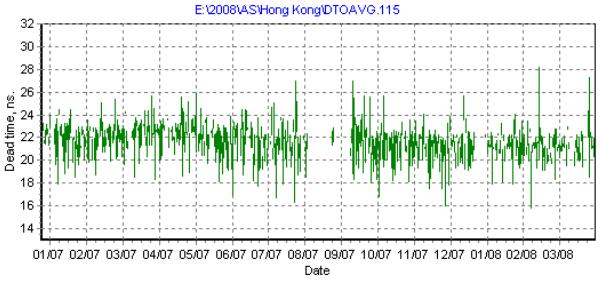


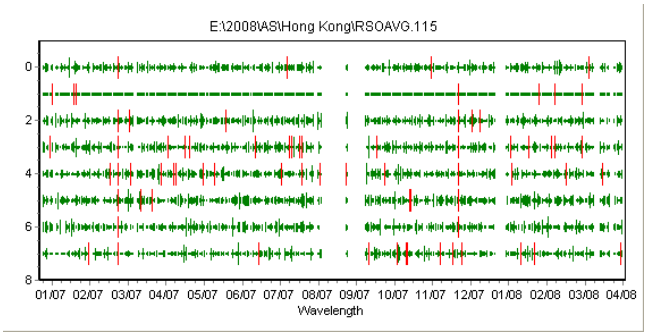
Next are the SL ratios for the past year showing the slow decrease last summer which stabilized to present values in December. During August the instrument was not operating due to the azimuth tracker bearing seizure. The bottom bearing was relieved with lubrication and was replaced just prior to this visit.

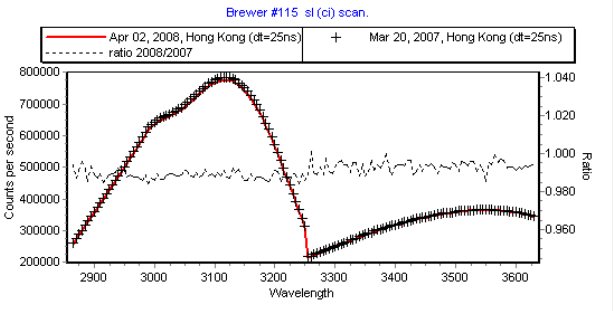


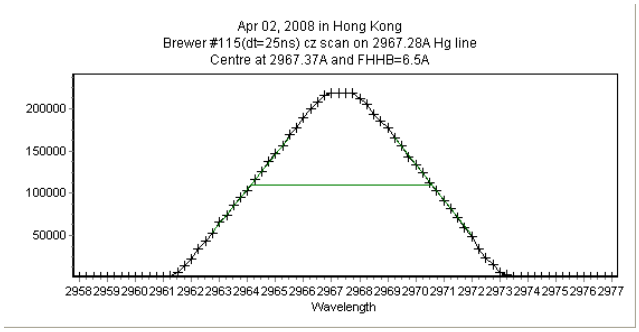
Next are sun scan results showing that the cal step of 292 is still proper. The mercury lamp had to be replaced at the end of last year, after only one year of operation.

Below are graphs of the stable DT and RS test results for the past year and a scan of standard lamp compared to 2006 scan. Then a CZ scan of Hg 2967A line, which shows normal slit function.

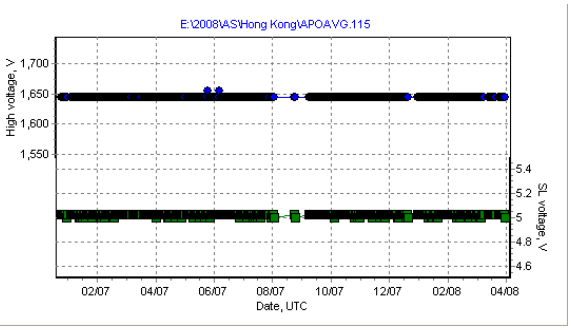


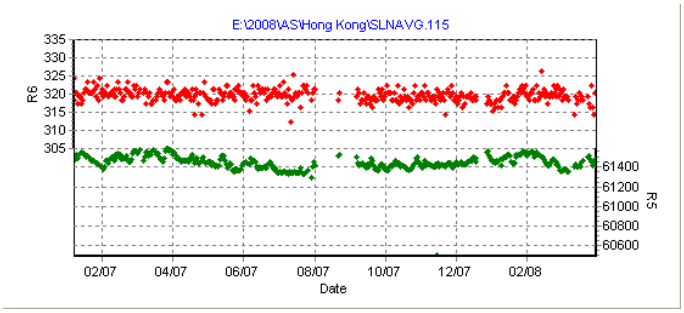






The high voltage and SL voltage results for the past year are shown below and next is graph of the SLNAVG file showing the F-ratio (R6) results. This last graph shows no change to NO_2 constants are necessary.

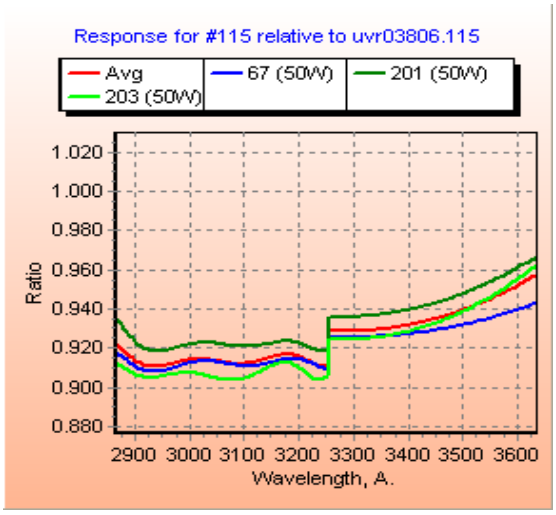


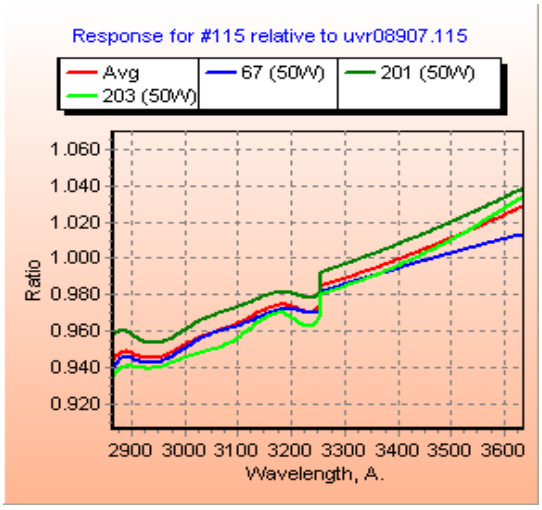


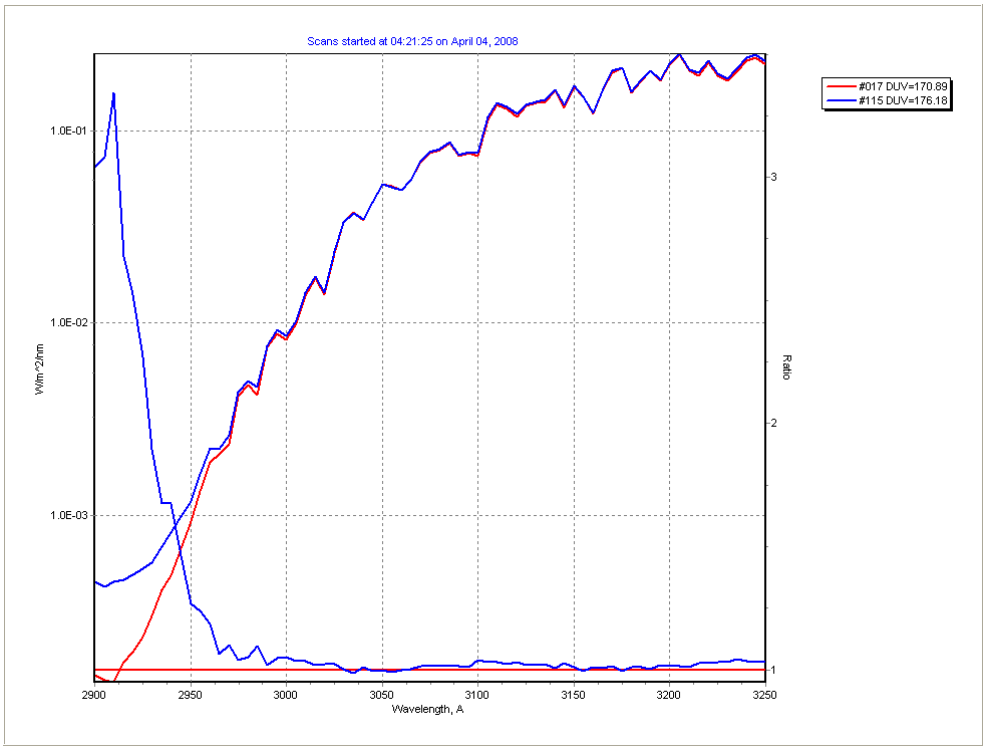
UV Calibration:

The UV calibration was completed and the new response file (uvr09308.115) is recommended for future use. Wavelength accuracy was checked with dispersion test and when processed the results were very similar to constants in use (dcf06205) and so no changes were made.

Below is new response file calculated from IOS lamps #67, #201, and #203 - compared to 2006 and 2007 files. The local UV lamps #331, #332 were also measured and showed similar change in sensitivity however if their original 1994 calibration files are used to obtain response file then it's level is ~5% higher.







Software change:

The latest version of control software (v376b) was installed but the reset routine (re-mb.rtn) had to be replaced with older version for operation with the control (W98) computer.