

The Sunspot Record: 1826-1980

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The International Sunspot Number is used as a measure of the level of solar activity in many important studies. This includes studies of the effects of solar activity on climate change and on the generation of radioisotopes used to infer levels of solar activity going back thousands of years. Any systematic errors in the historical record of the sunspot number can profoundly alter the conclusions of these studies. There is substantial evidence that the currently accepted International Sunspot Numbers have been subjected to changes in the way the numbers are calculated and to changes in the weights given to observations of various observers. In this talk I will focus on the time period from 1826 to 1980 which covers principal observers Schwabe, Wolf, Wolfer, Brunner, and Waldmeier. Previous investigations have indicated problems associated with Schwabe's observations (1826 to 1867), the first decades of the Greenwich observations (1874 to about 1910), and the introduction of a different counting method by Waldmeier (1946-1980). I will examine the evidence for these problems and the possible solutions that might be used to provide improved estimates of the sunspot numbers and their errors over this time interval.