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Calibrated H-Alpha Monitoring of Astrophysically Interesting Objects

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Given that the normal matter in the Universe is predominately hydrogen it makes sense that monitoring the first Balmer line of hydrogen would be a very common practice in astronomy. As an absorption line it can be used to monitor the surface temperature of stars, or examine open star clusters. As an emission line it is used to study emission line stars, nebulae, and active galaxies. Many different photometric systems have been developed over the years to monitor the H-alpha line. However, when many research teams each develop their own filter system it is very difficult to compare one data set to another, or to merge data sets to examine long period variations. Over the last 9 years we have been spectrophotometrically calibrating a new H-alpha index that can be used to monitor a variety of objects in both absorption and emission. The photometric index will be defined and its early application to a wide variety of objects will be presented. Some early monitoring efforts on High Mass X-ray Binaries, Be stars, Cepheids, RR Lyrae, δ Scuti variable, YSO's, and nearby Active Galaxies will be addressed.