```
PDS_VERSION_ID = PDS3

RECORD_TYPE = STREAM
OBJECT      = TEXT
  PUBLICATION_DATE    = 2017-03-09
  INTERCHANGE_FORMAT = ASCII
  NOTE                =
    "A brief overview of the error bars and confidence level in the
     derived SWAP solar wind data presented in this data set"
END_OBJECT = TEXT
END
```

The instrument design for the Solar Wind Around Pluto (SWAP) instrument on New Horizons is described by McComas et al. (2008), and the overall fitting procedure for the SWAP solar wind observations is described by Elliott et al. (2016). This document provides a very brief summary to provide an indication of confidence level in the data as presented. Interested users should consult the referenced papers for full details.

This procedure includes the use of a very detailed forward instrument response model based on laboratory energy and angular calibrations, ion trajectory simulations, and inflight calibration of the detector sensitivity and gain. Elliott et al. (2016) used a new technique ~~by~~ developed by Funsten et al. (2005) to perform an inflight absolute calibration of the final coincidence count rates using the individual primary and secondary CEM (Channel Electron Multiplier) detector count rate signals.

remove extra word

Typically, such inflight sensitivity calibrations are not performed for these kinds of observations; however, using this new technique Elliott et al. (2016) were able to perform an inflight absolute calibration of the coincidence rates. These final calibrated coincidence rates were used to derive the final solar wind density, speed and temperature values.

Elliott, et al. (2016) included two figures illustrating the Poisson count rate error bars used in the forward model count rate model analysis of the fit to obtain the solar density, speed, and temperature. The error bars for the solar wind protons were quite small since the count rates were quite high. In addition, Elliott et al. (2016) demonstrated for one fit how much the chi-square changes when the density, speed, and temperature fit parameters are adjusted relative to the final fit values. The chi-square is well minimized in speed and steeply drops within +/-5% of the final fit speed value. The minimization wells for temperature and density are more shallow and span +/-30%. This is consistent with the levels of agreement typically found at 1 AU when comparing ACE and WIND solar wind observations. ACE and WIND speeds typically are within 5 to 10% of one another, and the density and temperatures are typically within 30% of one another. Elliott et al. (2016) also compared propagated ACE, STEREO A, and STEREO B solar wind speeds and those were in high agreement with the observed New Horizons speeds. The radial trends in the density and temperature were in reasonable agreement with Voyager 2 observations as well.

References
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Elliott, H. A., D. J. McComas, P. Valek, G. Nicolaou, S. Weidner, and G. Livadiotis (2016), The New Horizons Solar Wind Around Pluto (SWAP)