Observation of Neon in the Helium focusing cone at 1 AU


Content:

- PUI Analysis with PLASTIC
- Fit routine for heavy PUI classification
- Heavy PUI time series
- Conclusions
Pickup Ions – Longterm Mass-per-charge spectrum

Longterm data
C+  
N+  
O+  
H2O+  
Ne+  
Model Spectrum

counts
10 15 20 25 30
m/q [u/e]
Pickup Ions – Shortterm Mass-per-charge spectrum

Artificial Data
C+  N+  O+  H2O+  Ne+
Model spectrum

counts

m/q [u/e]

Fit Results
Input counts

counts

m/q [u/e]
Pickup Ions – Time Series

Correlation of counts with the solar velocity caused by two effect:

1. Efficiency:
   - Varying solar wind velocity over time, which causes a varying detection efficiency

2. Instrumental cut-off:
   - PUls can be detected in a range of $E_{\text{Thresh}} - E_{\max}$ which causes a different coverage of velocity spectra for different species.
Pickup Ions – Interstellar Helium focusing cone

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Pickup Ions – Conclusions

Deviation between Inside and Outside

Ne$^+$ cone peak

Intensity

$m/q$ [u/e]