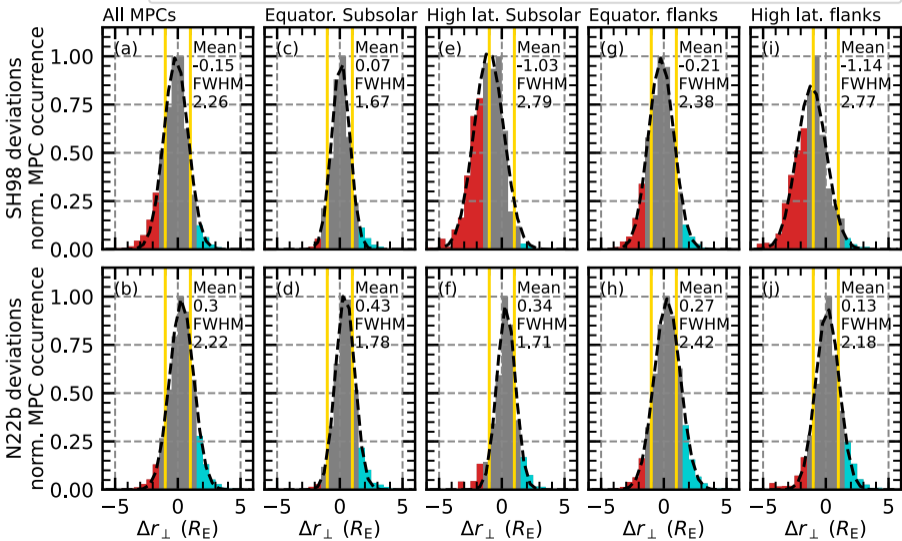


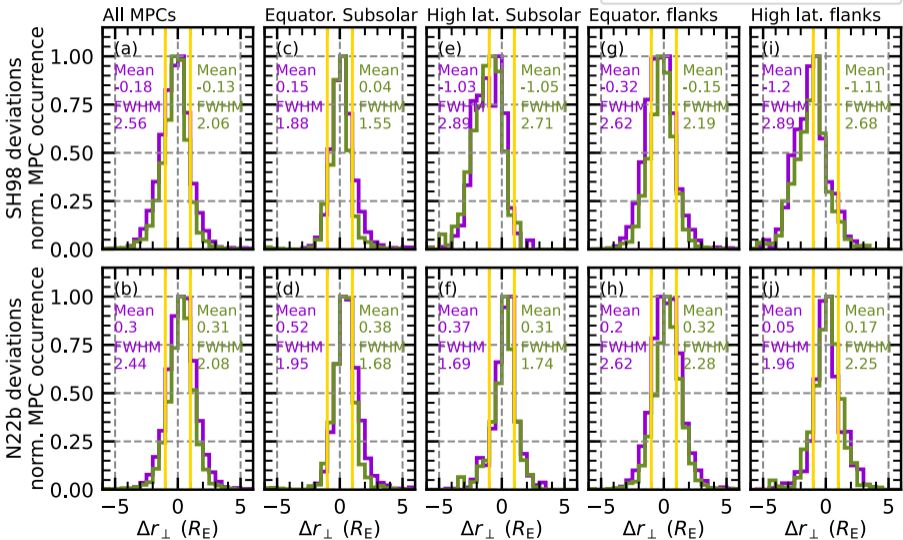
MPC sets (Bin width = $0.5 R_E$):

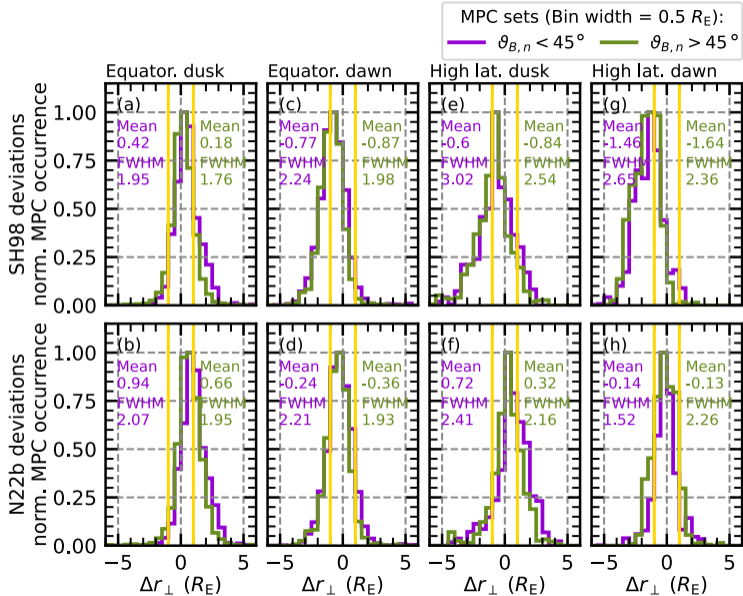
All MPCs
 Gauß fit
 compressed MPCs
 expanded MPCs

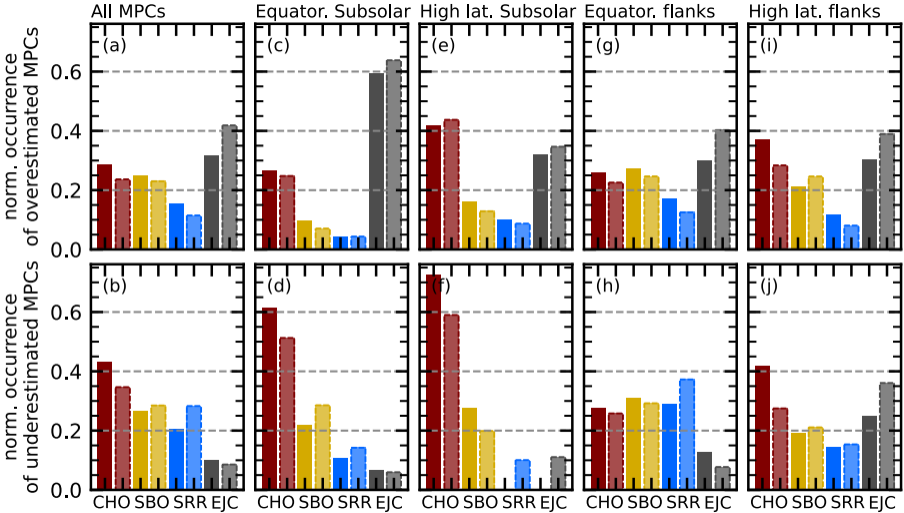


MPC sets (Bin width = $0.5 R_E$):

— $\theta_{B,n} < 45^\circ$ — $\theta_{B,n} > 45^\circ$







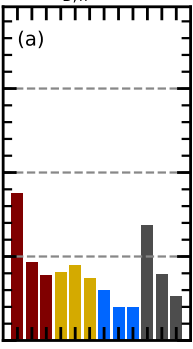
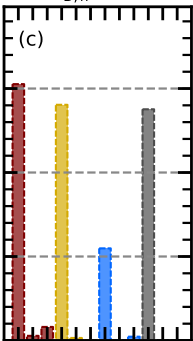
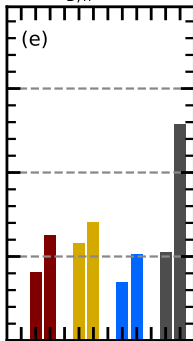
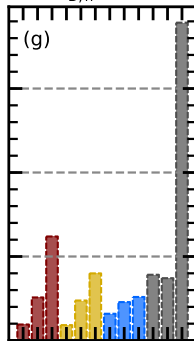
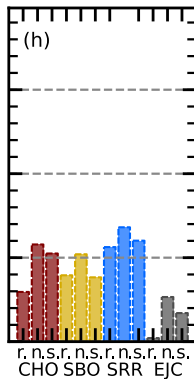
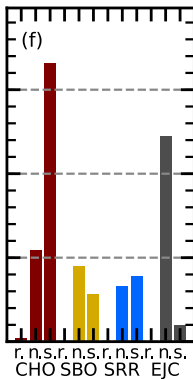
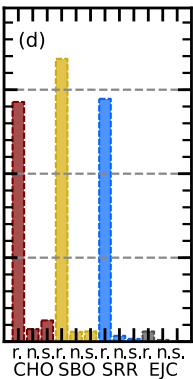
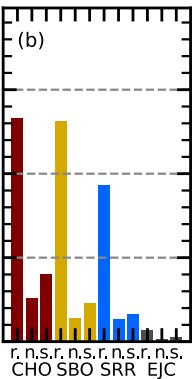
SH98 deviations
with $\theta_{B,n} < 45^\circ$ N22b deviations
with $\theta_{B,n} < 45^\circ$ SH98 deviations
with $\theta_{B,n} > 45^\circ$ N22b deviations
with $\theta_{B,n} > 45^\circ$ norm. occurrence
of underestimated MPCs

Table 3. Comparison of the relative occurrence rates of overestimated MPCs deviating from the SH98 and N22b models for different solar wind plasma conditions. The solar wind conditions are grouped according to the classification scheme of Xu and Borovsky (2015): coronal hole origin (CHO), streamer belt origin (SBO), sector reversal region (SRR) and ejecta (EJC). Each solar wind type is further divided into three subcategories corresponding to the IMF direction: quasi-radial IMF, northward IMF and southward IMF. The maximum occurrence rates for a given direction in each row are highlighted in bold. The values for the general solar wind classes are taken from Fig. 6, while the IMF direction indicates which of the directions is the most common relative to the occurrence of the type.

| comp. MPCs (SH98 / N22b) | Equat. subsol. | High lat. subsol. | Equat. flanks | High lat. flanks | All Regions |
|-----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| CHO | 26.64 % / 24.78 % | 41.87 % / 43.73 % | 25.76 % / 22.56 % | 36.91 % / 28.37 % | 28.39 % / 23.66 % |
| with | | | | | |
| rad. | 70.23 % / 71.66 % | 42.83 % / 37.21 % | 38.92 % / 34.05 % | 34.6 % / 33.12 % | 40.48 % / 38.04 % |
| north. | 6.92 % / 5.31 % | 26.57 % / 11.65 % | 28.09 % / 26.48 % | 31.34 % / 28.27 % | 27.19 % / 23.79 % |
| south. | 22.84 % / 23.03 % | 30.6 % / 51.14 % | 32.99 % / 39.47 % | 34.06 % / 38.61 % | 32.33 % / 38.17 % |
| SBO | 9.79 % / 7.05 % | 16.16 % / 12.89 % | 27.21 % / 24.65 % | 20.98 % / 24.63 % | 24.7 % / 23.01 % |
| with | | | | | |
| rad. | 62.17 % / 66.41 % | 37.38 % / 0.0 % | 25.59 % / 23.9 % | 28.11 % / 12.83 % | 27.48 % / 24.31 % |
| north. | 15.23 % / 14.26 % | 26.13 % / 24.53 % | 35.96 % / 37.58 % | 30.88 % / 19.7 % | 34.3 % / 35.3 % |
| south. | 22.6 % / 19.33 % | 36.49 % / 75.47 % | 38.45 % / 38.52 % | 41.02 % / 67.47 % | 38.22 % / 40.39 % |
| SRR | 4.13 % / 4.35 % | 10.04 % / 8.72 % | 17.14 % / 12.53 % | 11.8 % / 8.05 % | 15.23 % / 11.47 % |
| with | | | | | |
| rad. | 24.27 % / 0.0 % | 39.52 % / 0.0 % | 29.88 % / 30.5 % | 33.29 % / 22.24 % | 30.61 % / 28.98 % |
| north. | 60.8 % / 70.37 % | 28.06 % / 50.45 % | 32.64 % / 33.33 % | 29.31 % / 13.93 % | 32.4 % / 33.45 % |
| south. | 14.93 % / 29.63 % | 32.42 % / 49.55 % | 37.48 % / 36.17 % | 37.4 % / 63.84 % | 36.94 % / 37.57 % |
| EJC | 59.43 % / 63.81 % | 31.93 % / 34.66 % | 29.89 % / 40.26 % | 30.31 % / 38.95 % | 31.96 % / 41.86 % |
| with | | | | | |
| rad. | 8.48 % / 0.0 % | 24.7 % / 0.0 % | 37.29 % / 16.47 % | 43.25 % / 33.92 % | 35.38 % / 16.03 % |
| north. | 25.85 % / 2.44 % | 39.02 % / 4.99 % | 22.1 % / 20.35 % | 28.59 % / 22.97 % | 24.28 % / 18.5 % |
| south. | 65.66 % / 97.56 % | 36.28 % / 95.01 % | 40.61 % / 63.18 % | 28.16 % / 43.11 % | 40.34 % / 65.46 % |

Table 4. Comparison of the relative occurrence rates of underestimated MPCs deviating from the SH98 and N22b models for different solar wind plasma conditions. The solar wind conditions are grouped according to the classification scheme of Xu and Borovsky (2015): coronal hole origin (CHO), streamer belt origin (SBO), sector reversal region (SRR) and ejecta (EJC). Each solar wind type is further divided into three subcategories corresponding to the IMF direction: quasi-radial IMF, northward IMF and southward IMF. The maximum occurrence rates for a given direction in each row are highlighted in bold. The values for the general solar wind classes are taken from Fig. 6, while the IMF direction indicates which of the directions is the most common relative to the occurrence of the type.

| exp. MPCs (SH98 / N22b) | Equat. subsol. | High lat. subsol. | Equat. flanks | High lat. flanks | All Regions |
|----------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| CHO | 61.19 % / 51.26 % | 72.49 % / 59.01 % | 27.7 % / 25.8 % | 41.87 % / 27.49 % | 43.04 % / 34.66 % |
| with | | | | | |
| rad. | 47.04 % / 52.29 % | 63.48 % / 59.96 % | 62.35 % / 55.54 % | 55.6 % / 55.47 % | 52.96 % / 54.1 % |
| north. | 15.75 % / 15.98 % | 7.45 % / 10.68 % | 21.74 % / 28.31 % | 16.61 % / 15.5 % | 17.93 % / 21.51 % |
| south. | 37.21 % / 31.73 % | 29.08 % / 29.36 % | 15.91 % / 16.15 % | 27.79 % / 29.04 % | 29.11 % / 24.38 % |
| SBO | 21.77 % / 28.55 % | 27.51 % / 19.87 % | 30.84 % / 29.22 % | 19.07 % / 21.09 % | 26.56 % / 28.48 % |
| with | | | | | |
| rad. | 75.75 % / 70.24 % | 35.99 % / 46.51 % | 67.17 % / 60.57 % | 66.44 % / 54.05 % | 70.42 % / 63.65 % |
| north. | 10.25 % / 15.06 % | 0.0 % / 25.36 % | 17.18 % / 22.63 % | 21.74 % / 18.36 % | 14.5 % / 19.85 % |
| south. | 14.0 % / 14.7 % | 64.01 % / 28.13 % | 15.65 % / 16.8 % | 11.82 % / 27.59 % | 15.08 % / 16.5 % |
| SRR | 10.57 % / 14.22 % | 0.0 % / 10.06 % | 28.95 % / 37.26 % | 14.29 % / 15.35 % | 20.38 % / 28.29 % |
| with | | | | | |
| rad. | 72.43 % / 70.03 % | — / 0.0 % | 66.69 % / 56.3 % | 64.34 % / 67.83 % | 68.1 % / 59.19 % |
| north. | 19.24 % / 18.97 % | — / 100 % | 12.6 % / 21.21 % | 26.86 % / 20.91 % | 14.45 % / 20.97 % |
| south. | 8.33 % / 11.0 % | — / 0.0 % | 20.71 % / 22.49 % | 8.8 % / 11.26 % | 17.46 % / 19.84 % |
| EJC | 6.47 % / 5.97 % | 0.0 % / 11.07 % | 12.52 % / 7.73 % | 24.78 % / 36.07 % | 10.02 % / 8.57 % |
| with | | | | | |
| rad. | 0.0 % / 19.32 % | — / 0.0 % | 0.0 % / 36.03 % | 74.71 % / 54.16 % | 9.7 % / 37.28 % |
| north. | 72.89 % / 55.58 % | — / 49.97 % | 70.24 % / 40.66 % | 25.29 % / 38.96 % | 65.11 % / 43.07 % |
| south. | 27.11 % / 25.1 % | — / 50.03 % | 29.76 % / 23.31 % | 0.0 % / 6.88 % | 25.2 % / 19.65 % |