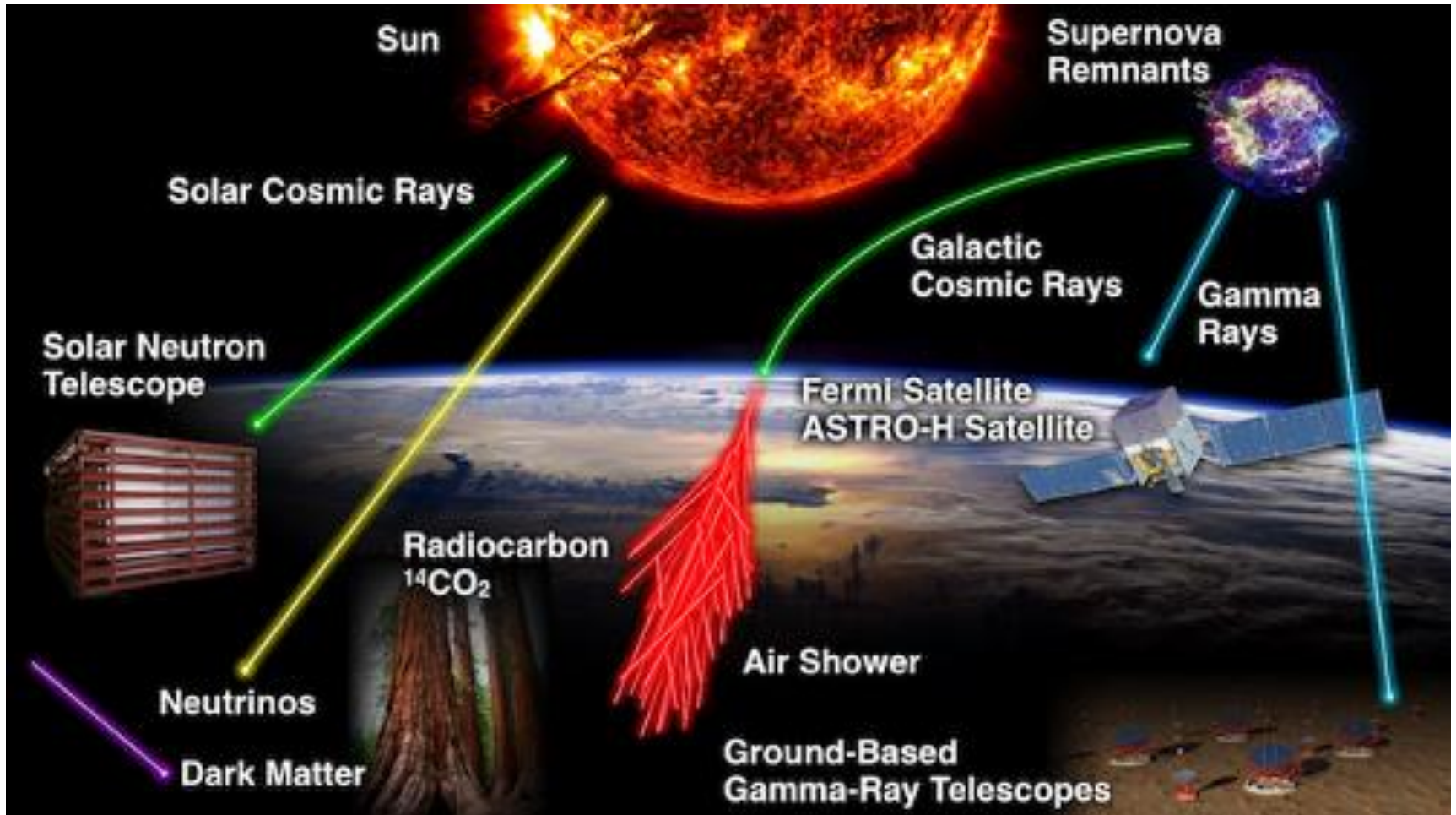




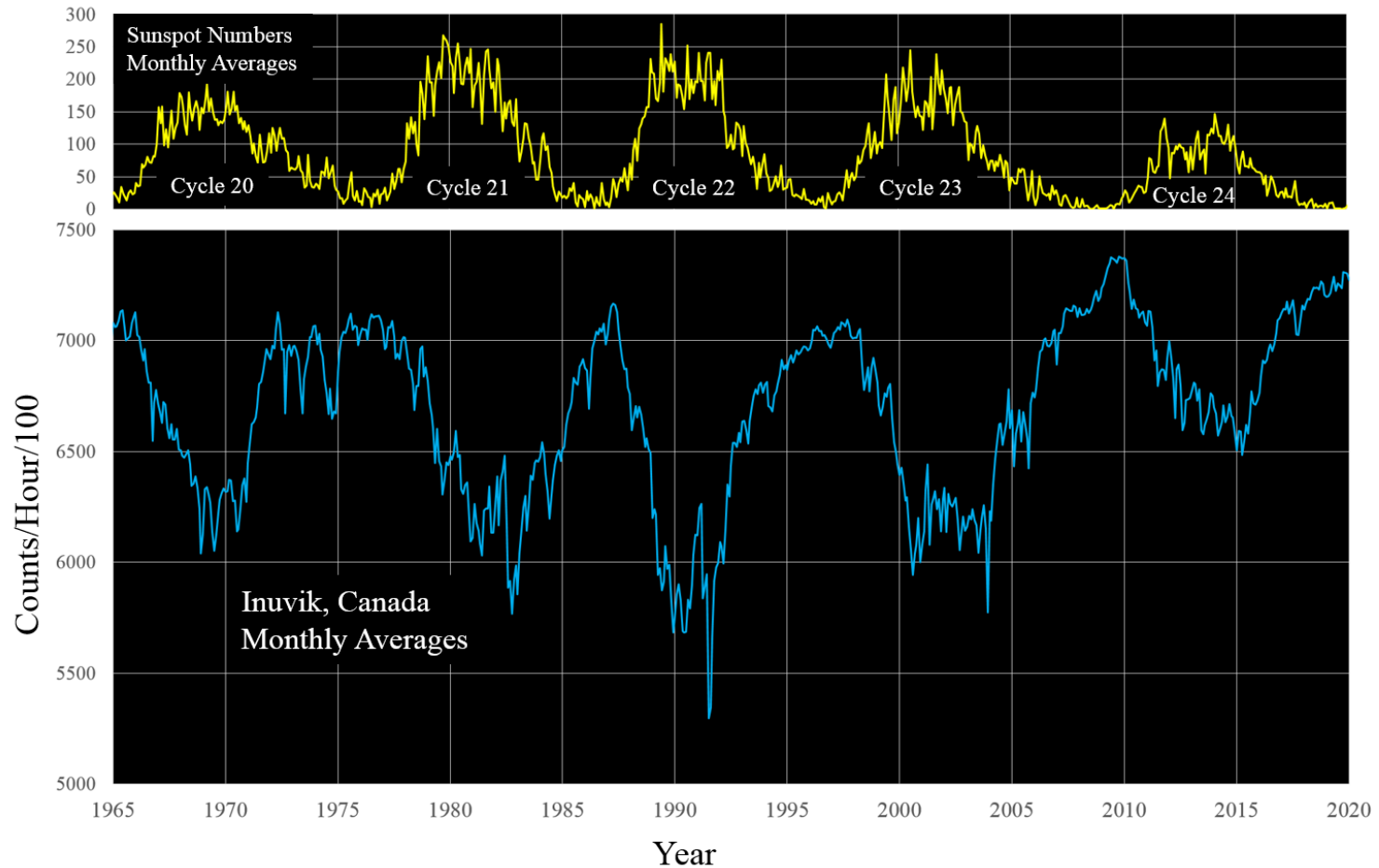
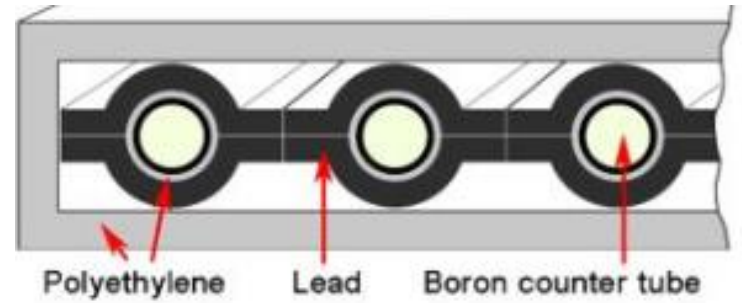
latitude survey data Vs.
Mawson neutron monitor data



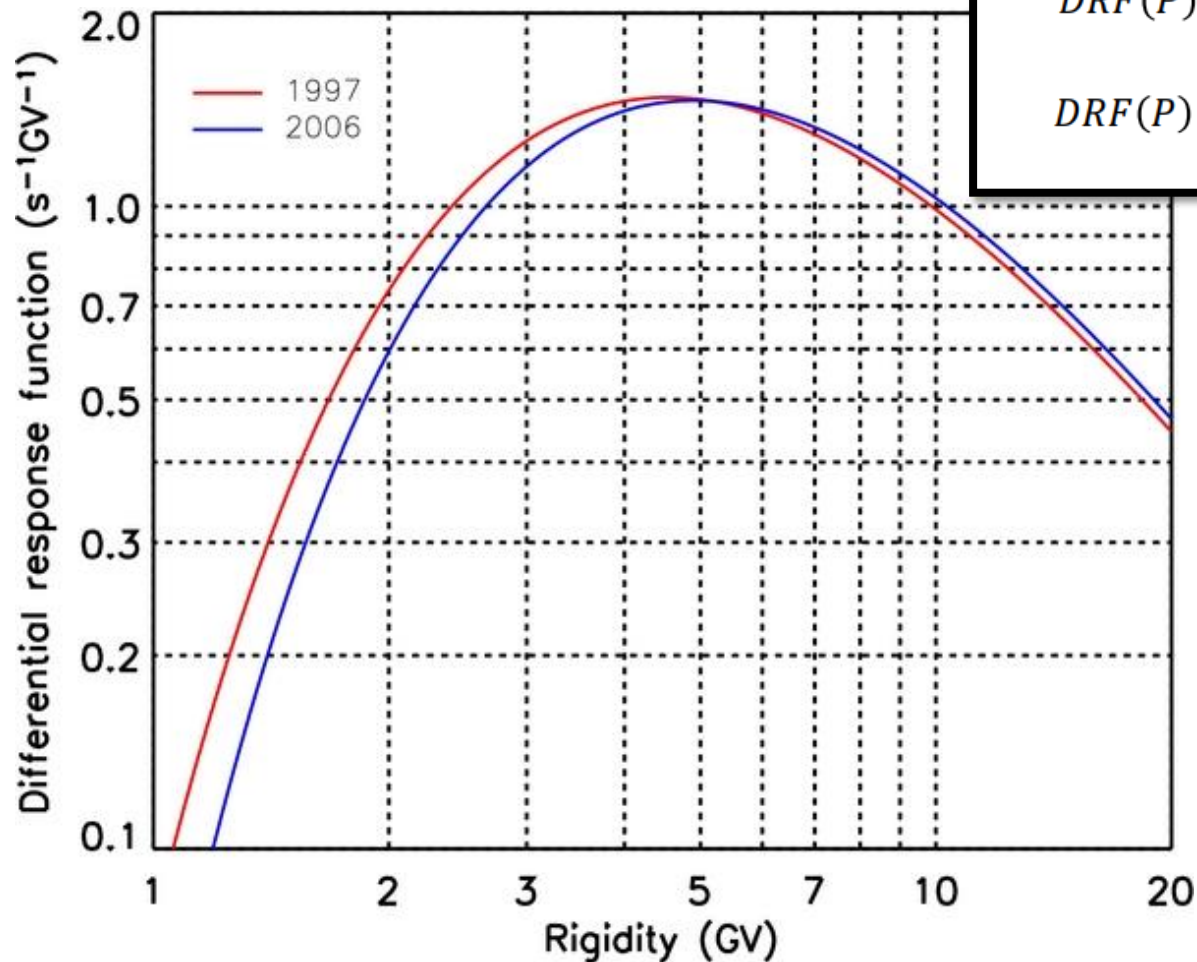
Cosmic Rays from space



Solar Modulation



Problem



$$N(P_c) = N_0(1 - e^{-\alpha P_c^{-\kappa}}),$$

$$N(P_c) = \int_{P_c}^{\infty} DRF(P) dP,$$

$$DRF(P) = N_0 \alpha P^{-\kappa-1} \kappa e^{-\alpha P^{-\kappa}}.$$

$$DRF(P) = - \left[\frac{dN}{dP_c} \right]_p = \sum_i J_i(P, t) Y_i(P, h)$$

Nuntyakul et al. (2014)

Nuntiyakul et al. (2014)

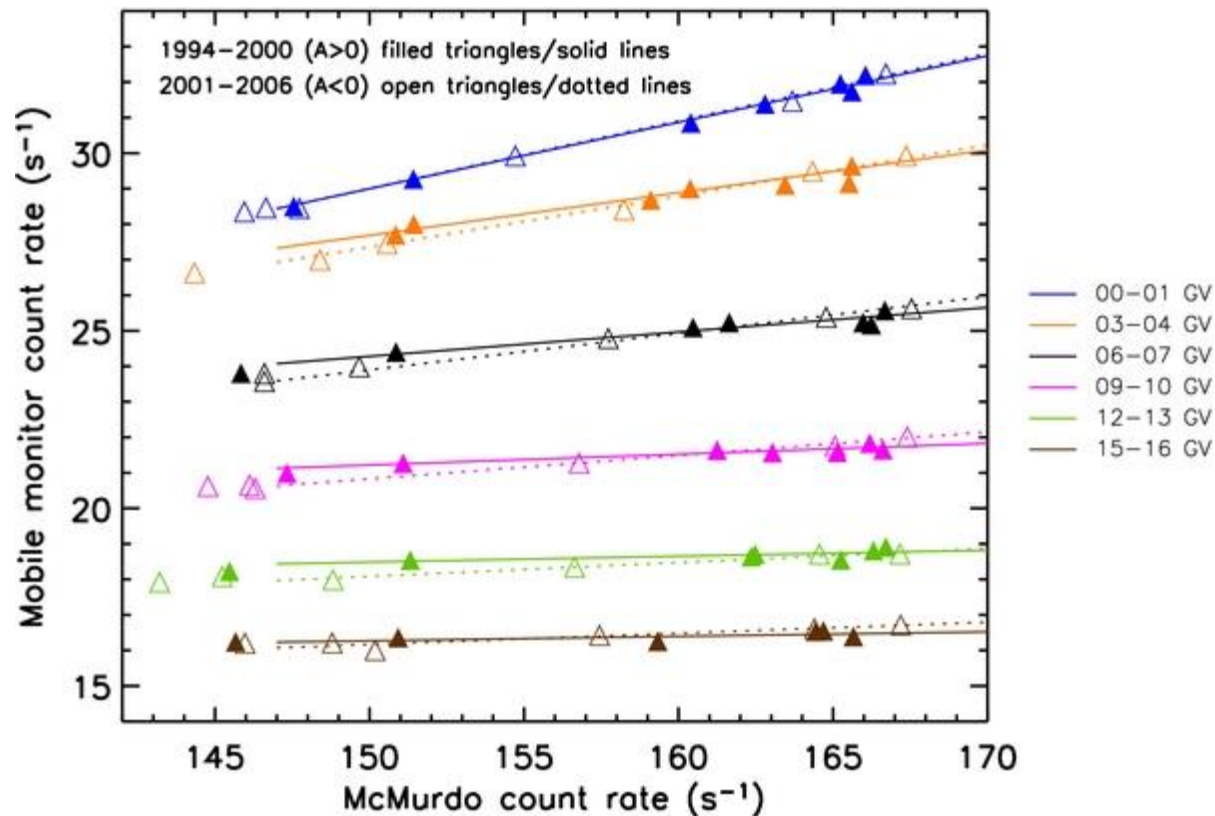
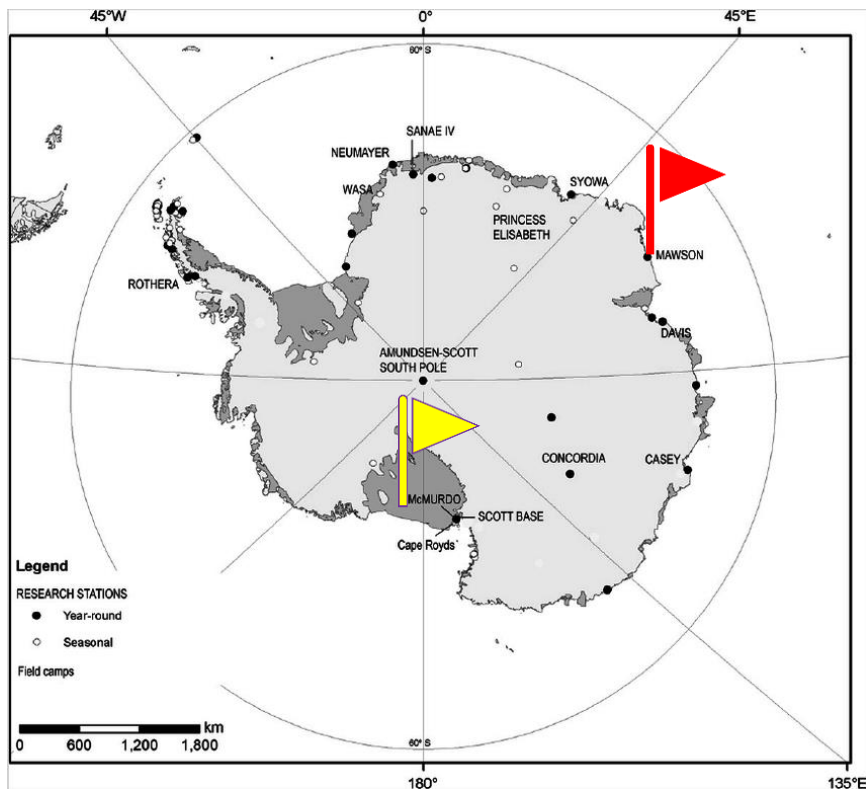


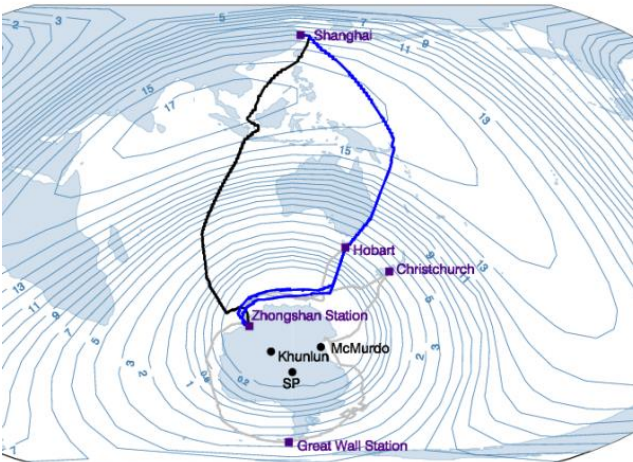
Figure 1.3 Alternative presentation of the averaged data using selected rigidity bins and superimposing the data for different solar magnetic polarities. A filled triangle is used to indicate positive ($A > 0$) solar magnetic polarity with solid lines showing the linear fits. Open triangles indicate data for negative ($A < 0$) solar magnetic polarity while the dotted lines are linear fits to these data. There are clear differences in cosmic ray modulation before and after the solar magnetic polarity reversal.



Mawson Station



Latitude Survey



Khampakdee et al

THIS IS THE NEW VERSION OF NEST
CAUTION: THE OLD ONE DOES NOT DISPLAY
PLEASE USE THIS NEW VERSION AND REPORT ANY BUGS

3 ways 2 use NEST



? Quick Plots

Last Data

GLE 72

GLE

conditions & information
to use data

top

[dec 2018] Nest welcomes AATA
(AATA). Data available in real time
since december 6th 2018

? Stations

(When selecting multiple stations, note that only one variable is selected)

- AATA
- AATB
- APTY
- ARNM
- BAKN
- CALG
- CALM
- DJON
- DOMB
- DOMC
- DRBS
- ESOI
- FSMT
- HRMS

QUERY RESULTS SUMMARY

```
# STATION: MWSN
# START TIME: 2020-07-29 15:51:00 UTC
# END TIME: 2020-07-30 14:37:00 UTC
# NMDb TABLE: revised original
# REV EQ. ORI: Yes, revised data are identical to the original data for this period
# DATA TYPE: corr_for_pressure(RCORR_P)
# AVERAGING: No
# ORIGINAL RES: 1 min
```

Timestamps always correspond to the beginning of the time interval

Data retrieved via NMDb are the property of the individual data providers. These data are non commercial use to within the restriction imposed by the providers. If you use such data for your research or applications, please acknowledge the origin by a sentence like 'We acknowledge the NMDb database (www.nmdb.eu) founded under the European Union's FP7 programme (contract 007), and the PIs of individual neutron monitors at: Mawson ()'

| start_date_time | RCORR_P |
|---------------------|---------|
| 2020-07-29 15:51:00 | 259.980 |
| 2020-07-29 15:52:00 | 264.018 |
| 2020-07-29 15:53:00 | 262.402 |
| 2020-07-29 15:54:00 | 265.450 |
| 2020-07-29 15:55:00 | 266.253 |
| 2020-07-29 15:56:00 | 258.587 |
| 2020-07-29 15:57:00 | 265.952 |

? Overplot main

www01.nmdb.eu/nest/

Database

Mawson NW data Survey year 2019

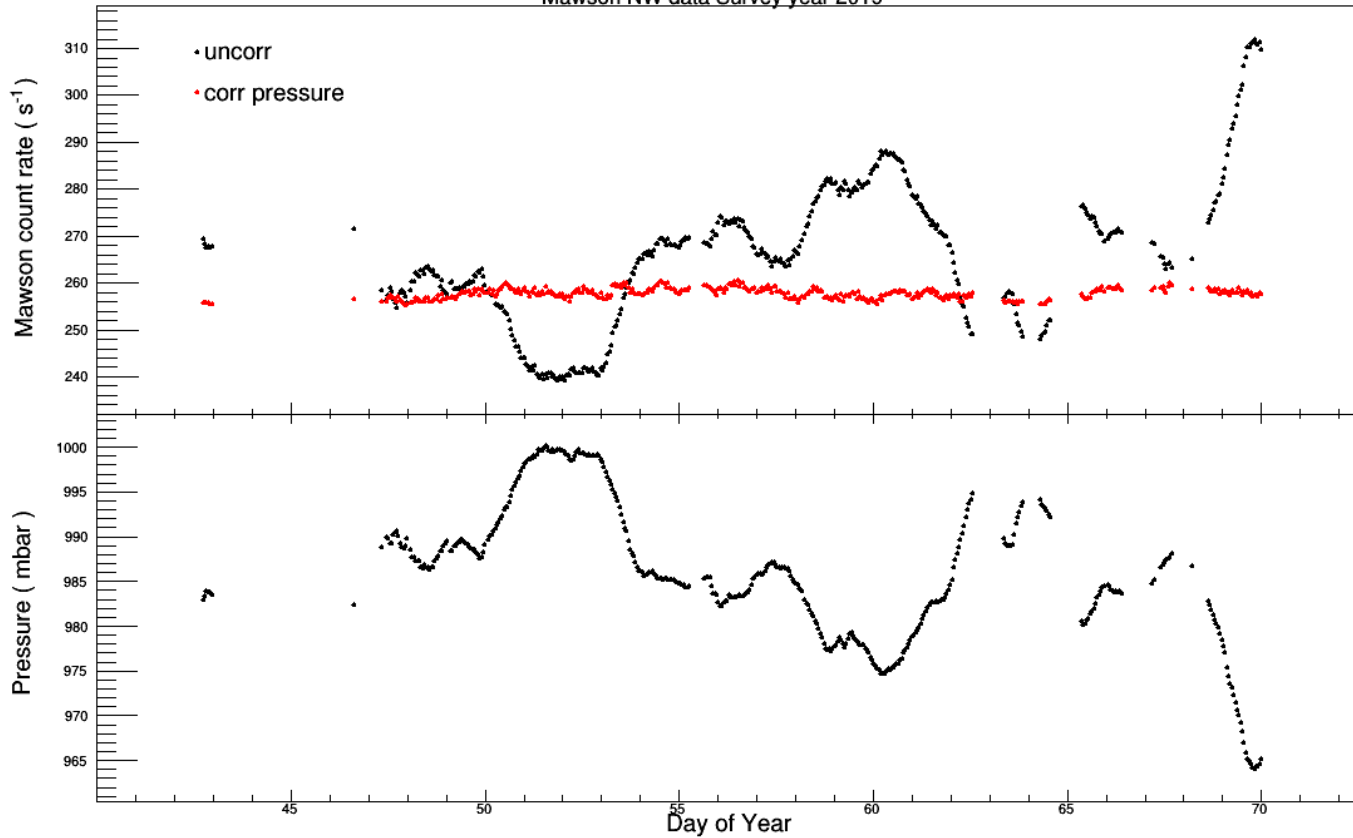


Figure 4.1 show the Mawson NM data at Survey year 2019. Upper-part display count rate of uncorrected data (black dot) and pressure corrected data (red dot) while lower-part display pressure in mbar unit

Mawson NM Data 2019

Ship-borne NW data Survey year 2019

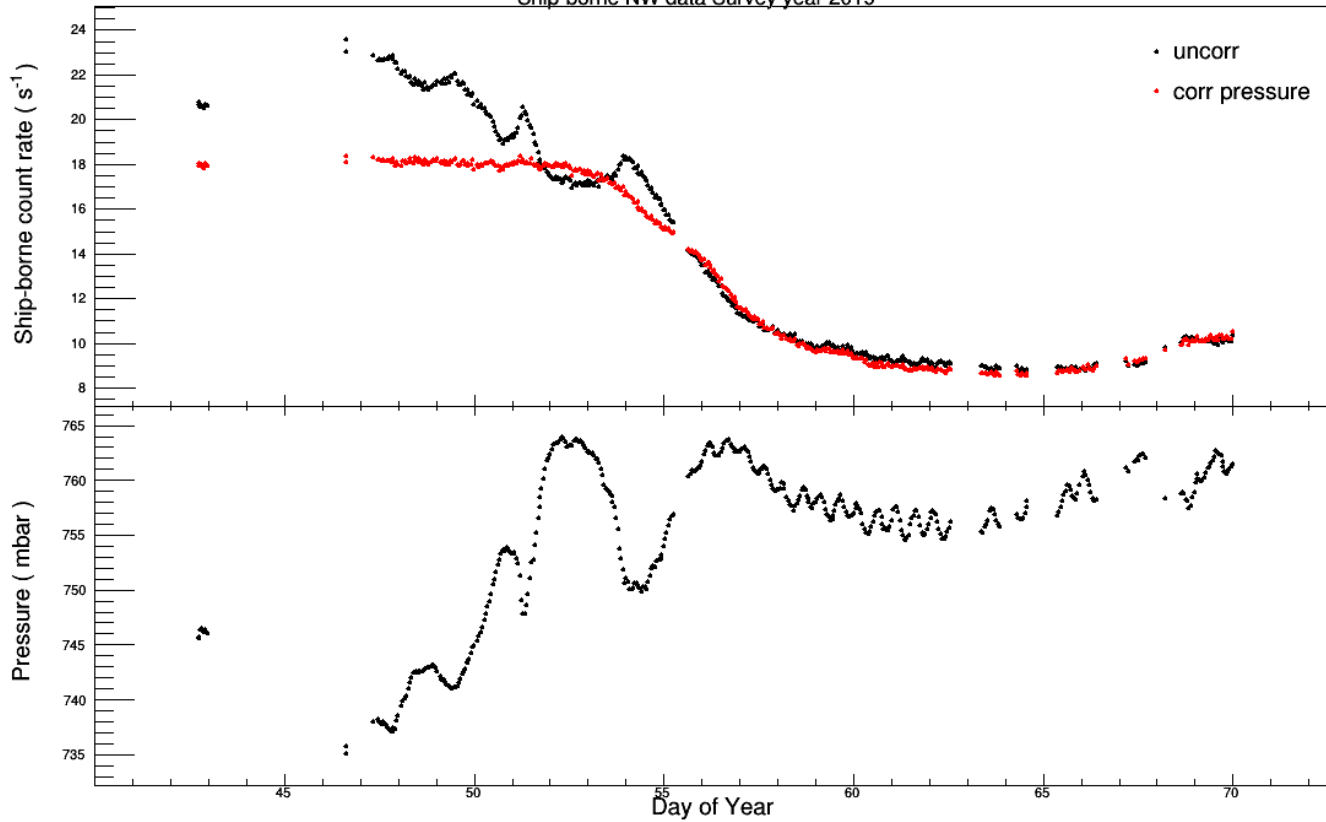


Figure 4.2 show the Ship-borne NM data at Survey year 2019. Upper-part display count rate of uncorrected data (black dot) and pressure corrected data (red dot) while lower-part display pressure in mbar unit

Ship-borne NM Data 2019

Survey year 2019

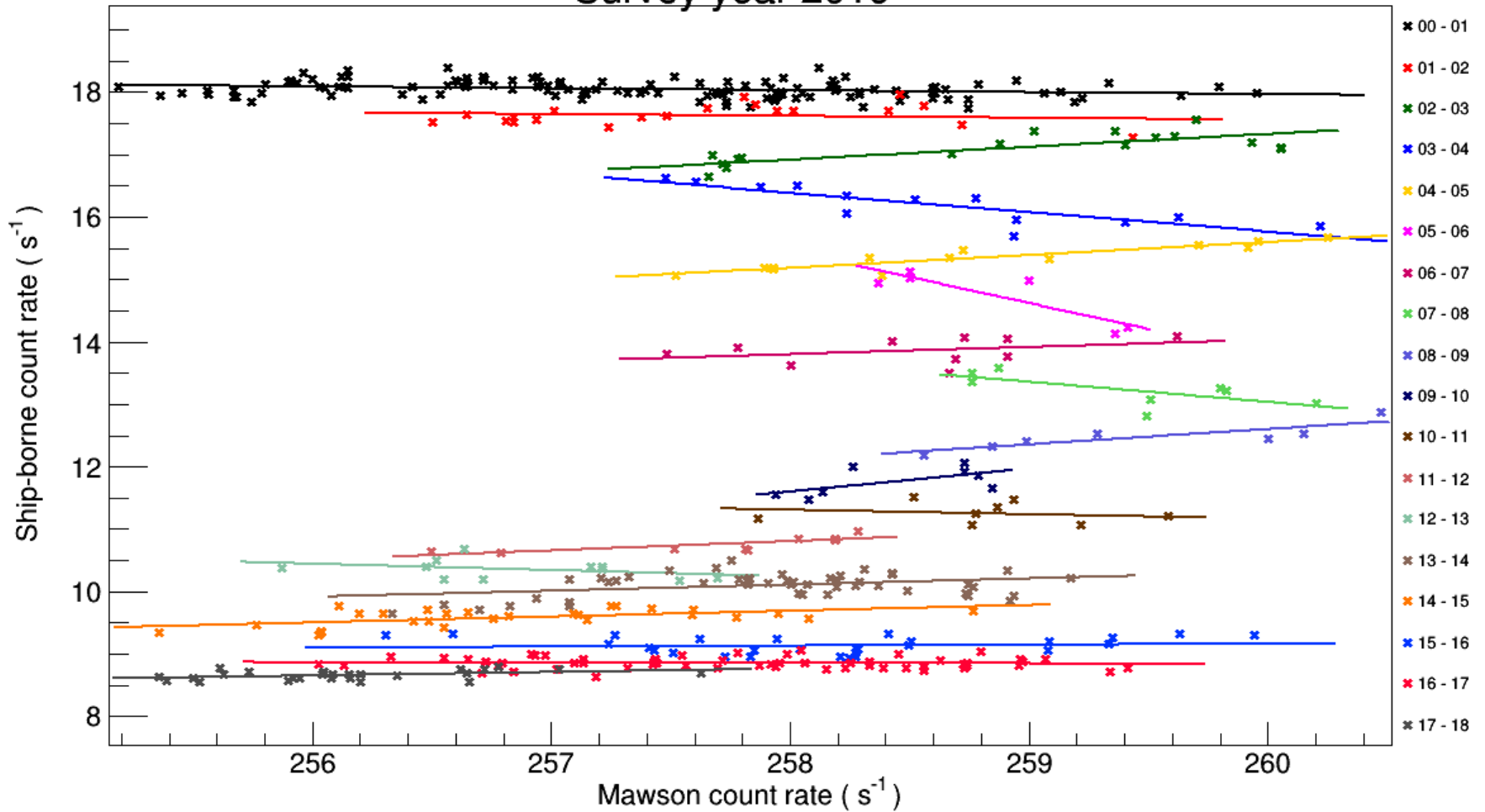


Figure 4.3 Ship-borne count rate Vs Mawson count rate in Survey year 2019

Mawson NW data Survey year 2020

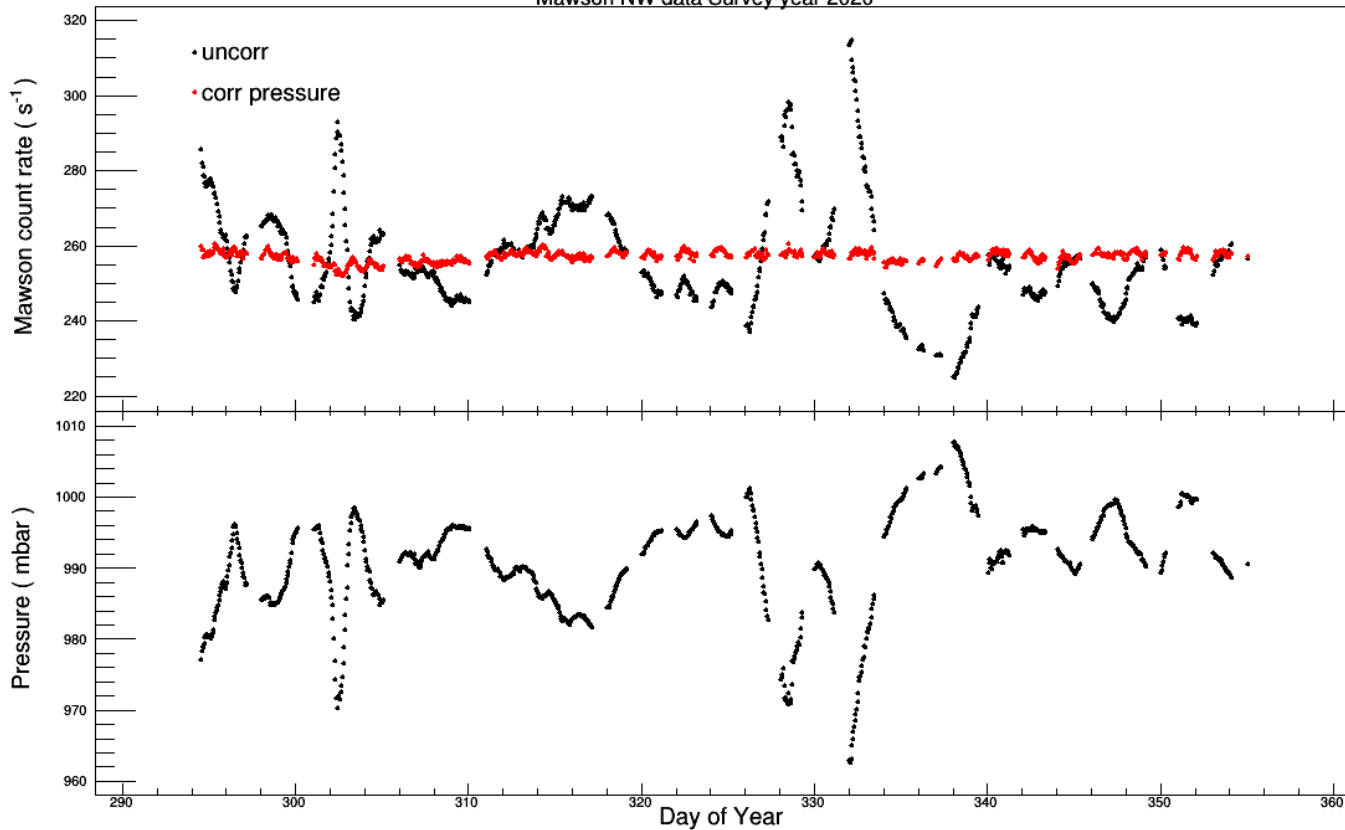


Figure 4.1 show the Mawson NM data at Survey year 2020. Upper-part display count rate of uncorrected data (black dot) and pressure corrected data (red dot) while lower-part display pressure in mbar unit

Mawson NM Data 2020

Ship-borne NW data Survey year 2020

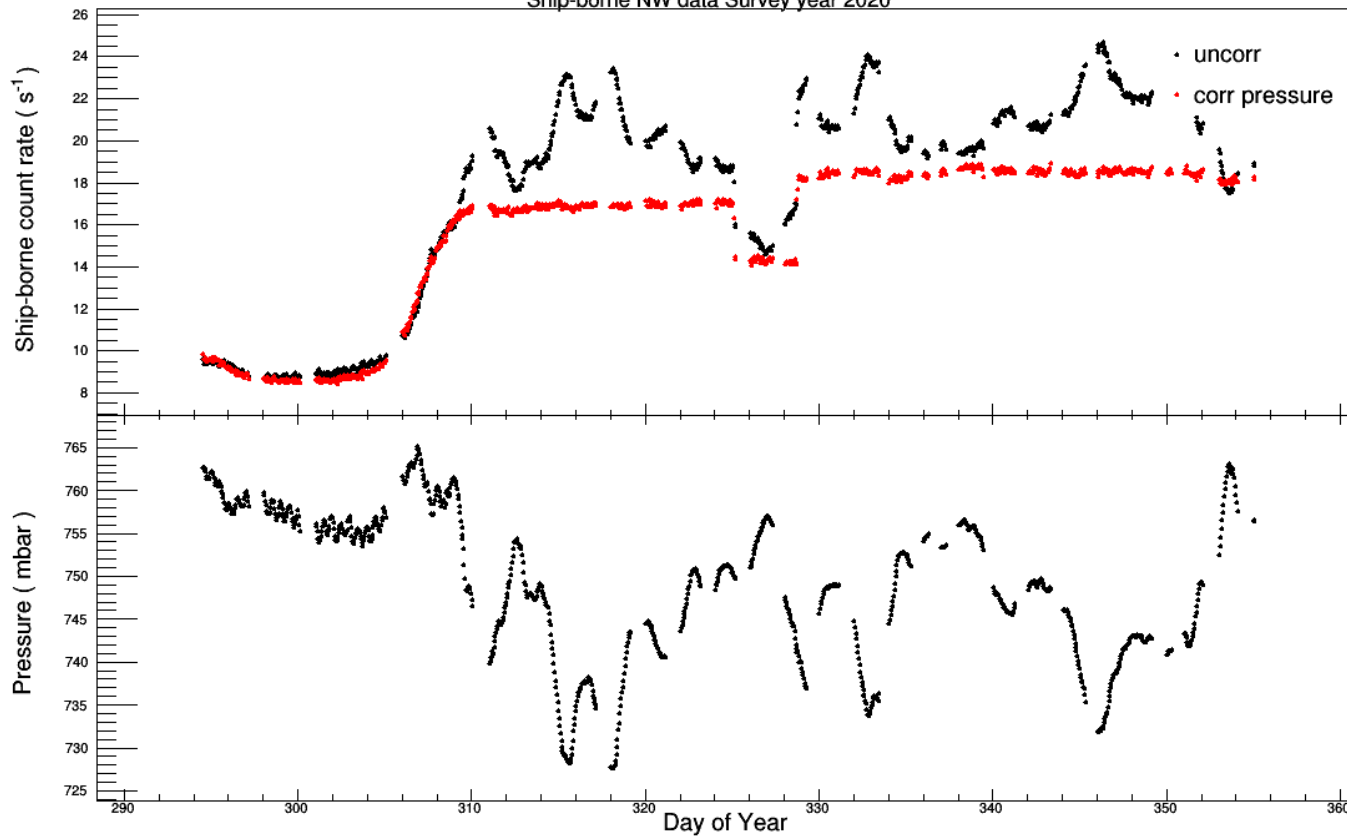


Figure 4.1 show the Ship-borne NM data at Survey year 2020. Upper-part display count rate of uncorrected data (black dot) and pressure corrected data (red dot) while lower-part display pressure in mbar unit

Ship-borne NM Data 2020

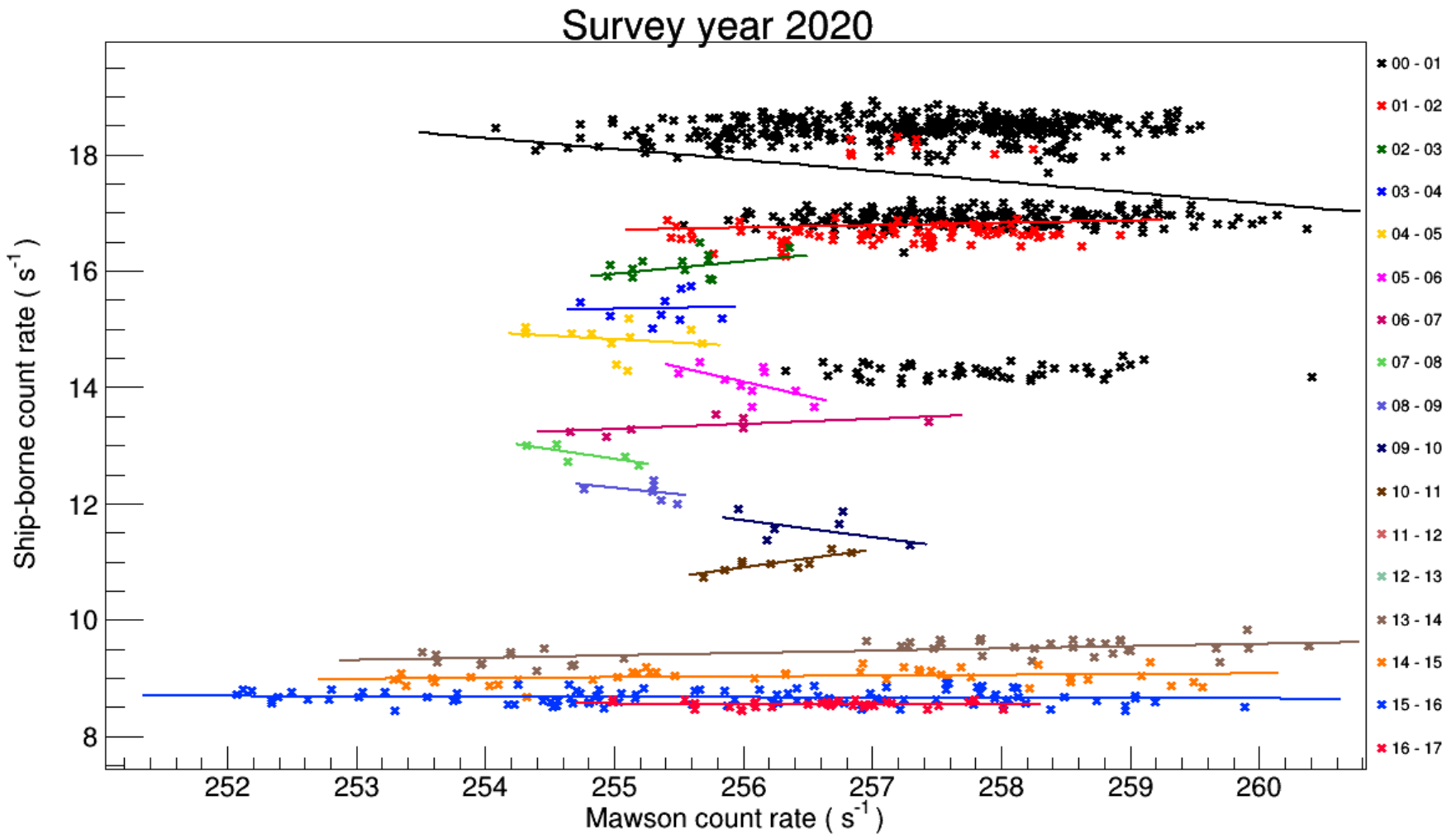


Figure 4.3 Ship-borne count rate Vs Mawson count rate in Survey year 2020

What's Next ?

- Study more survey year
- Find practicable rigidity bin size
- Try to figure out crossover problem
- Understand more about behavior of cosmic rays spectrum



Thank You