Projekt SPOLEČNÉ VZDĚLÁVÁNÍ PRO SPOLEČNOU BUDOUCNOST

NoGravity 2014
Kosmonautika, kosmický výzkum a technologie

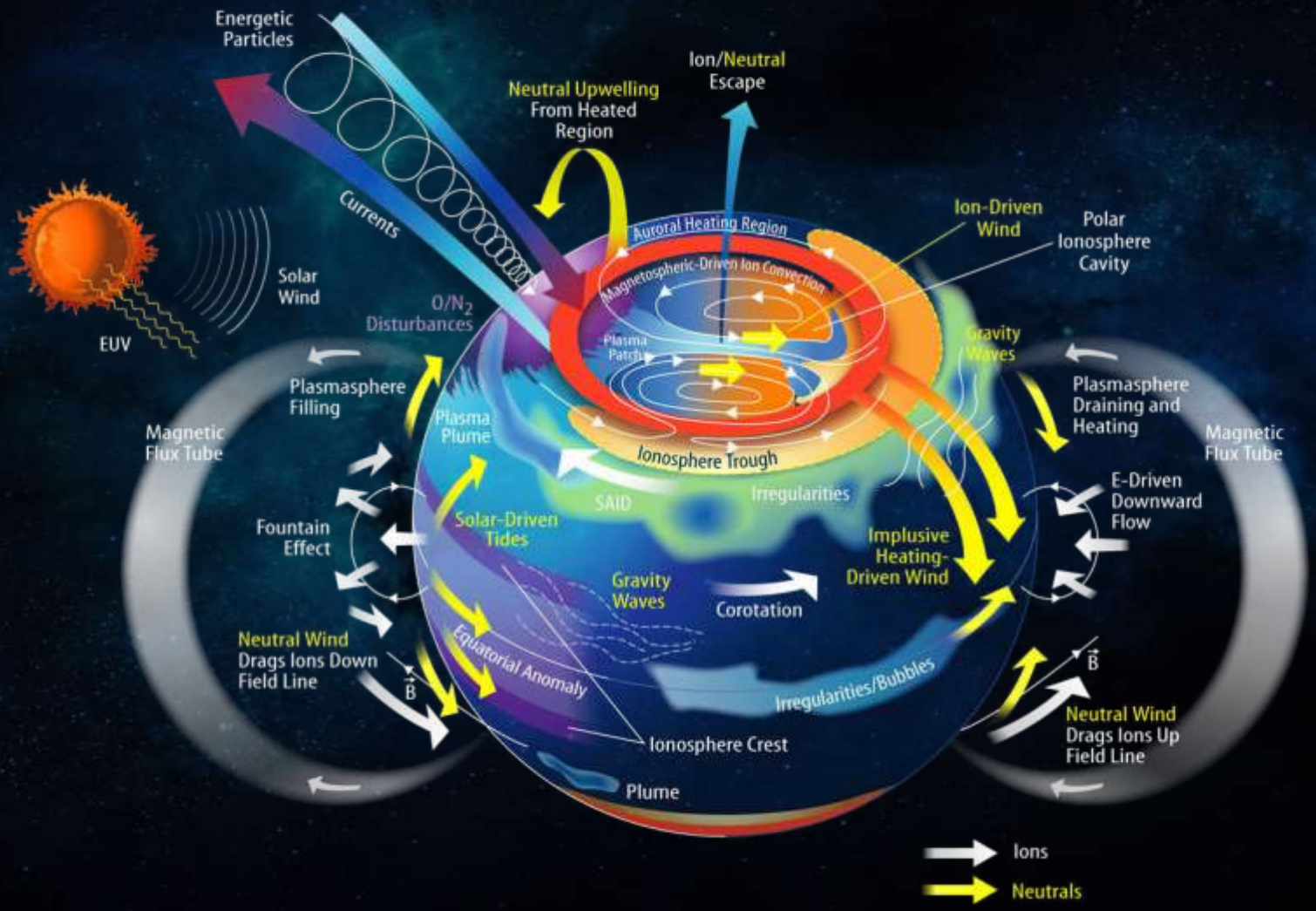
SPOLEČNĚ DO STRATOSFÉRY

Detektor pre meranie UV pozadia.

Maxim Mizov

Foto Zemi z Mesiaca UV kamerou Apollo 16.

Procesy v blízkom vesmíre sprievodným javom ktorých je emisia UV svetla.



Očakávaná intenzita UV svetla λ=300-400nm na nočnej strane Zemi.

$\sim 5 \cdot 10^3$ fotónov $[s^{-1} m^{-2} sr^{-1}]$

Druhy detektorov.

APD – Avalanche photodiode

SPAD – Single-photon avalanche diode

MPPC (SiPM) – multipixel photon counter
(Silicon photo-multiplier)

PMT – Photo-multiplier tube

APD – Avalanche photodiode

Zo
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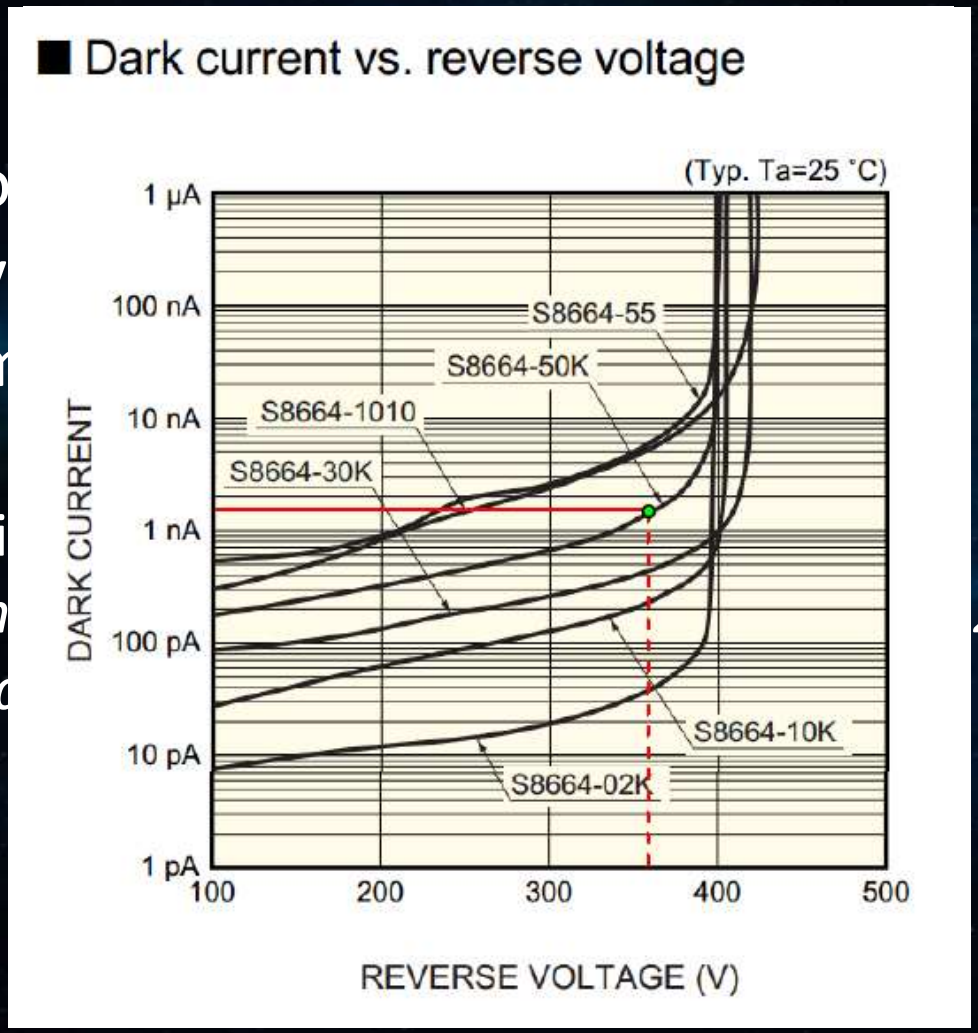
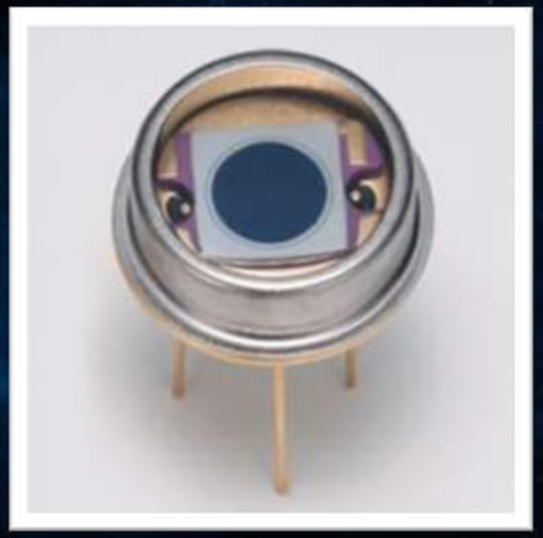
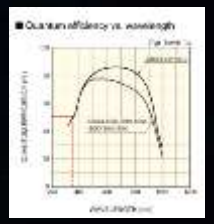
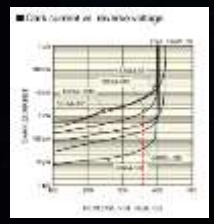
sr^{-1}]
2

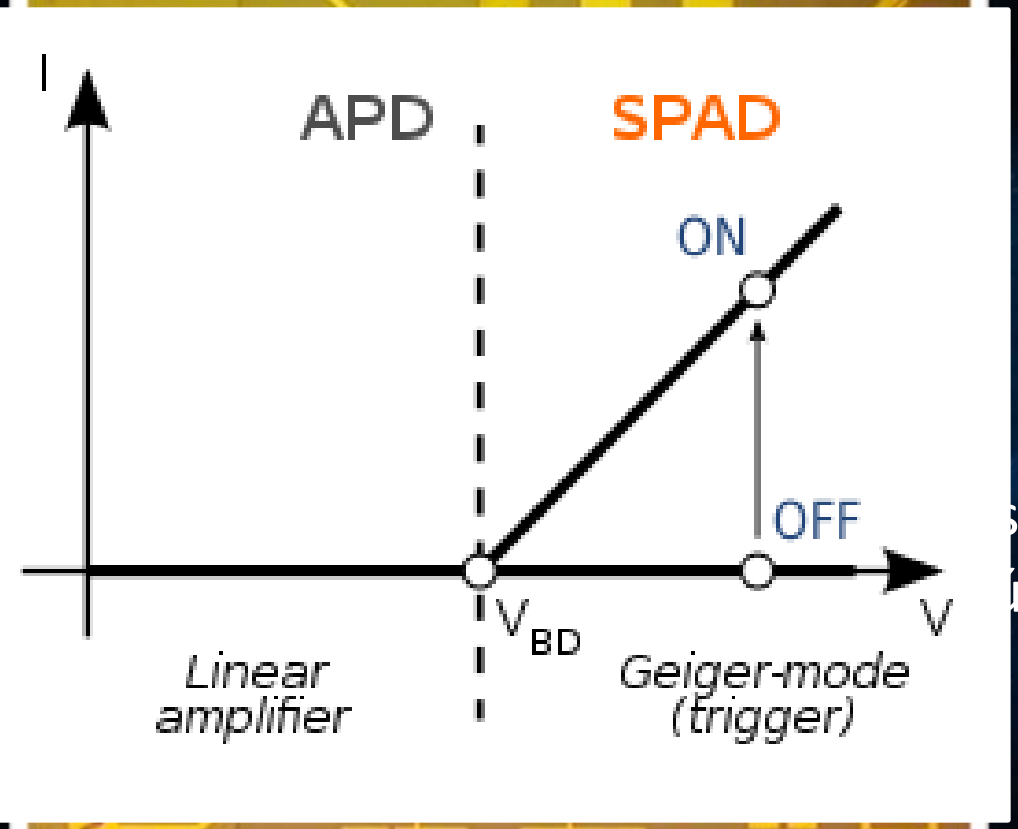


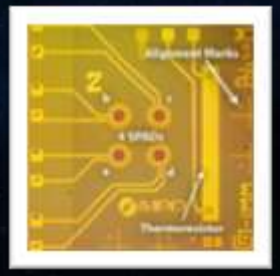


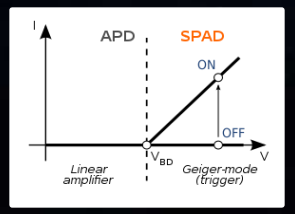




SPAD – Single-photon avalanche diode







MPPC (SiPM) – multipixel photon counter (Silicon photo-multiplier)

Zosilne

Kvanto

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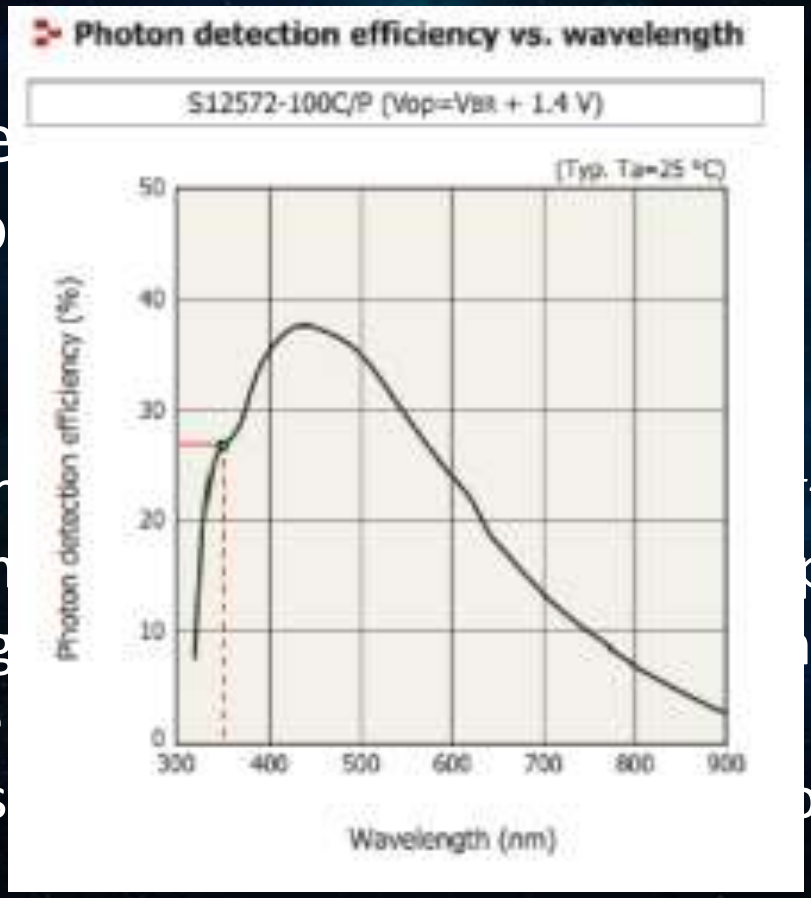
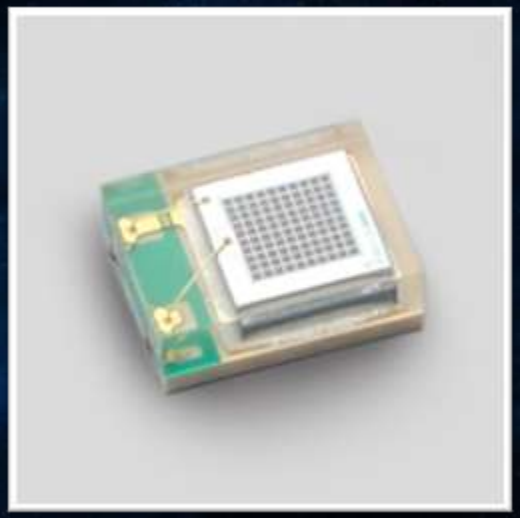
Počet tr poctu

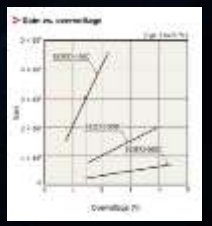
pulzov g

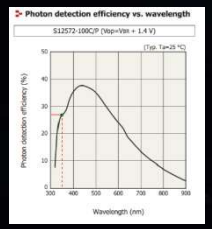
prípade

presnos otónov.









PMT – Photo-multiplier tube

Zosil

Kvar

Tma

Na tr -násobiče,

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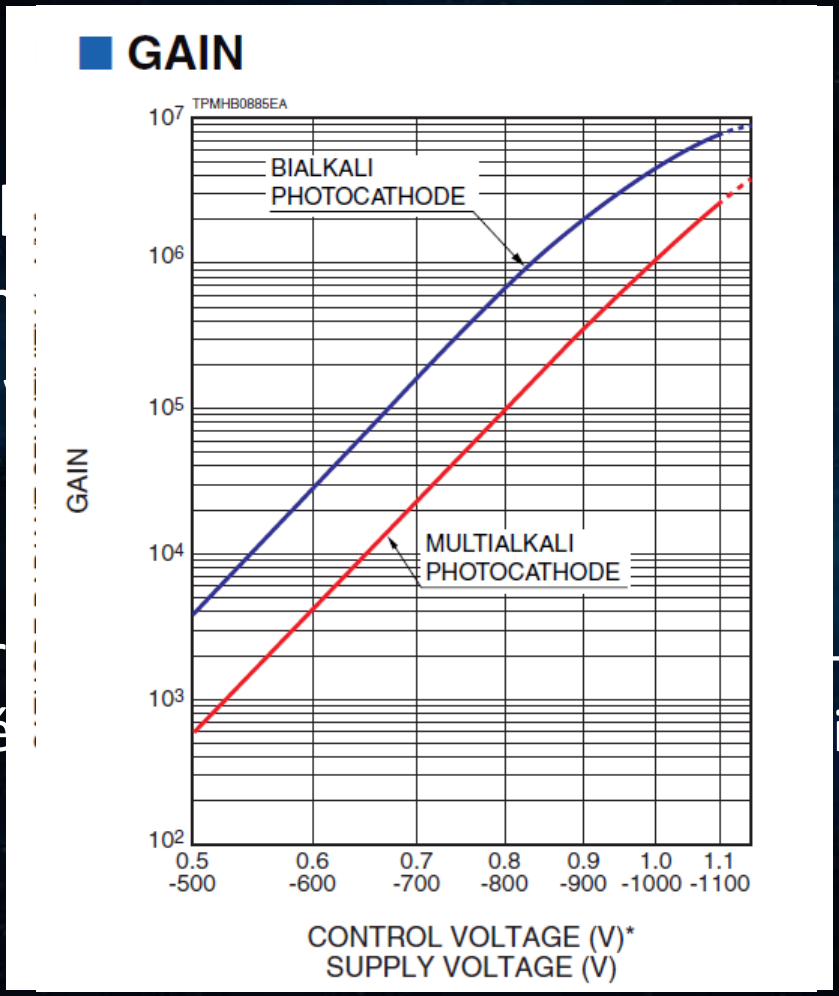
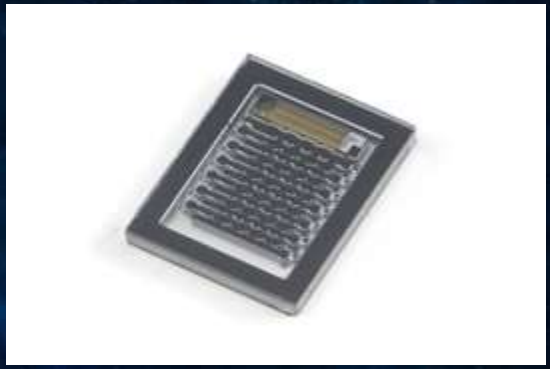
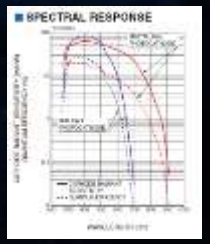
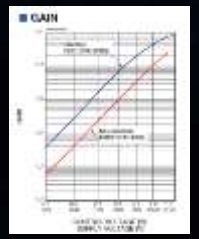
typu



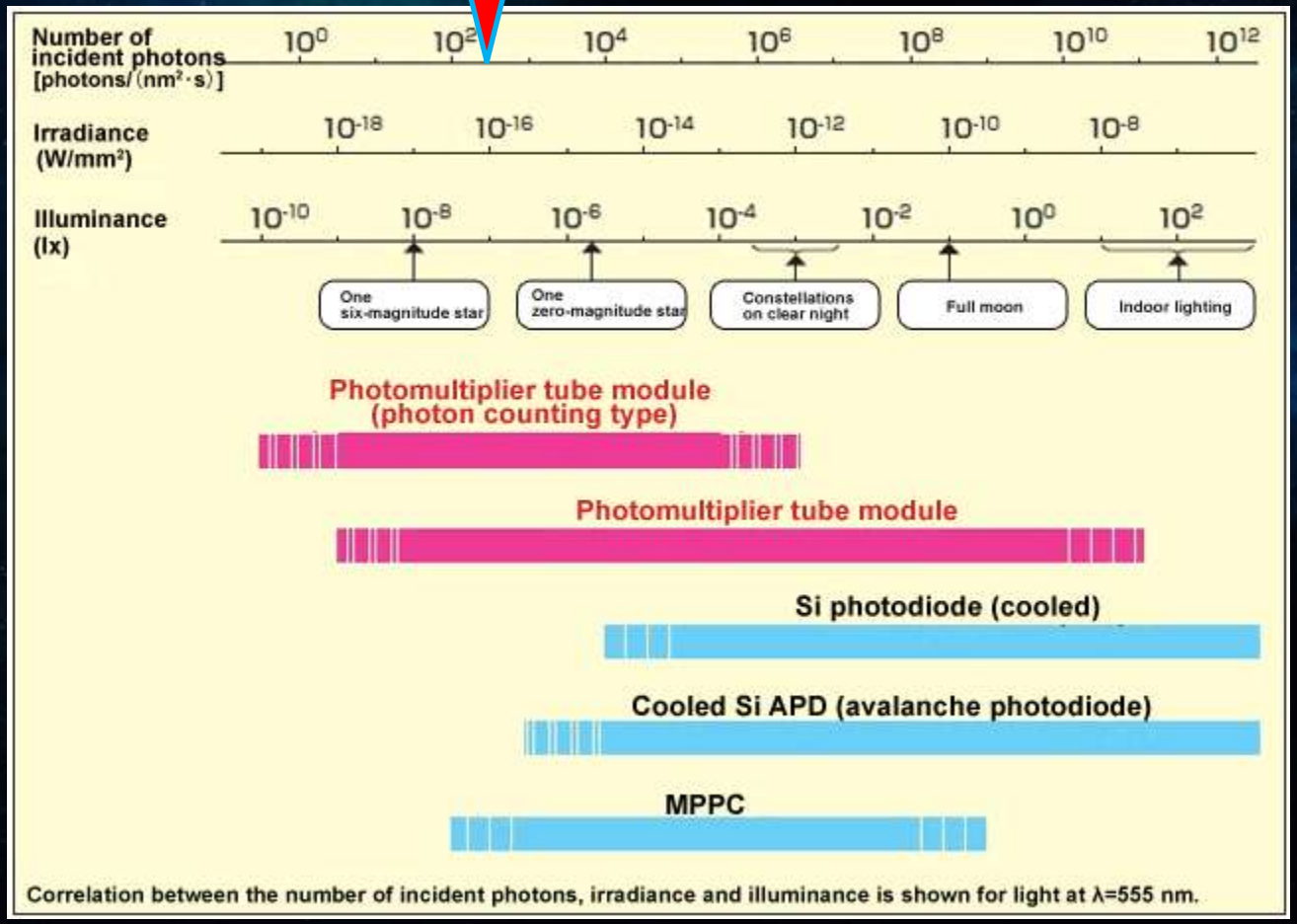




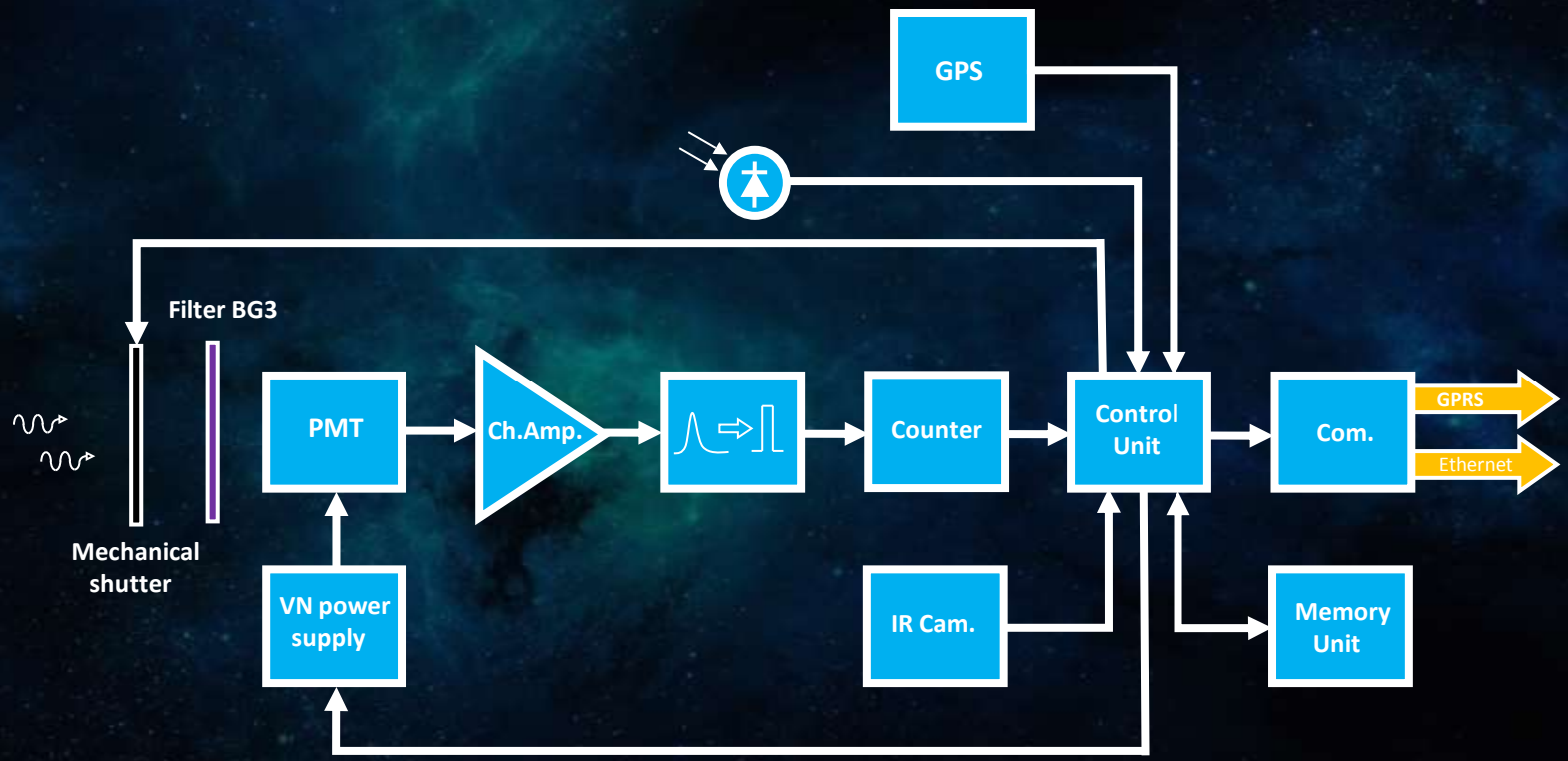


Citlivosť detektorov.

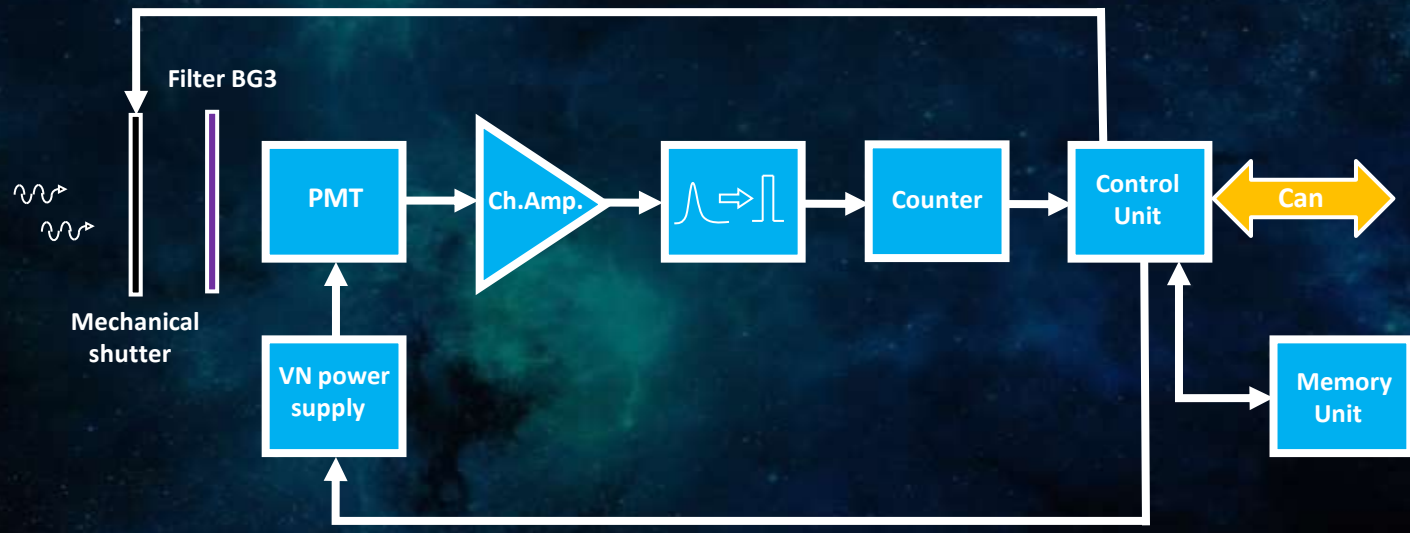
500 fotónov [$ns^{-1}\ m^{-2}\ sr^{-1}$]



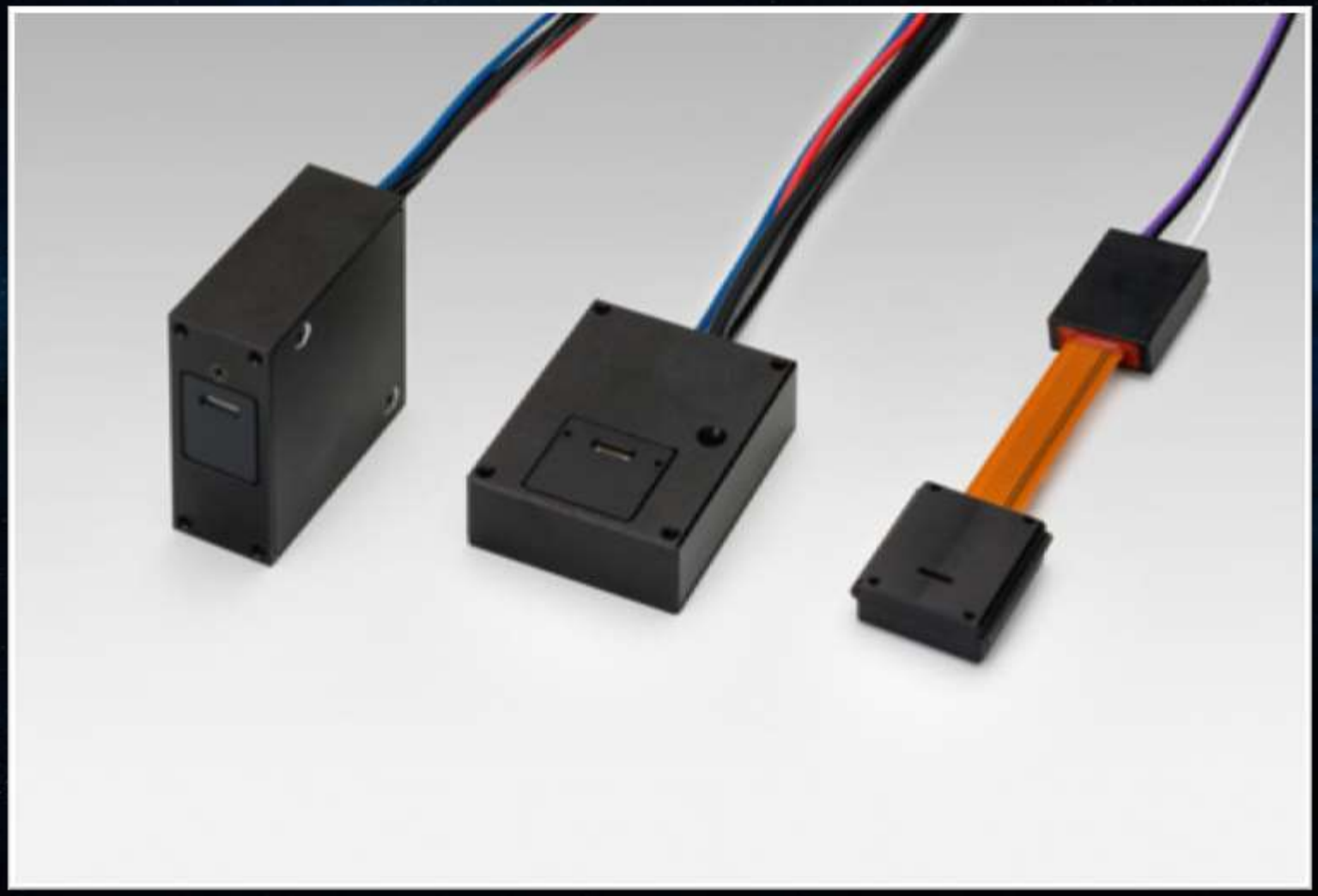
Bloková schéma pristroja pre pozemne meranie.

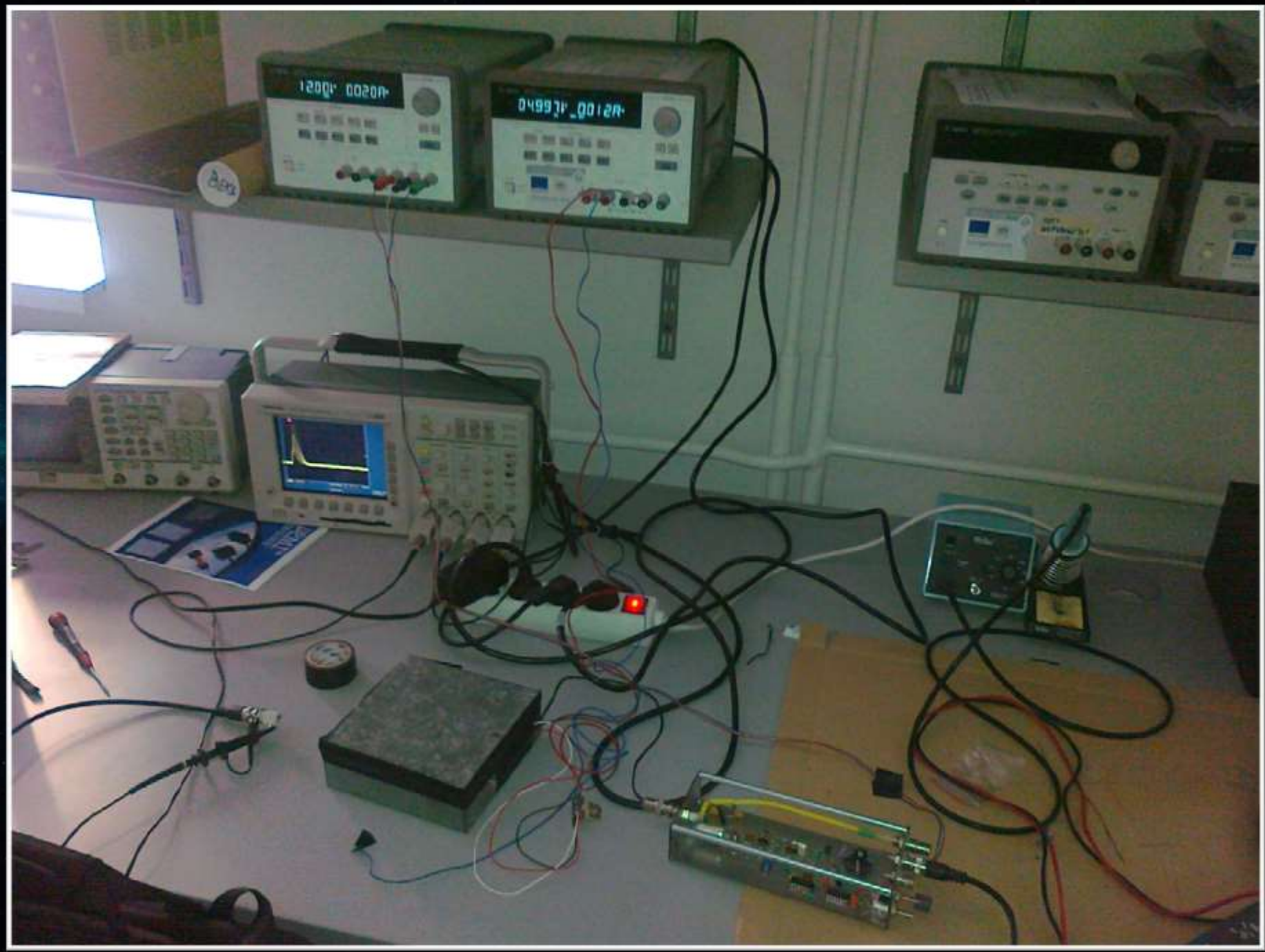


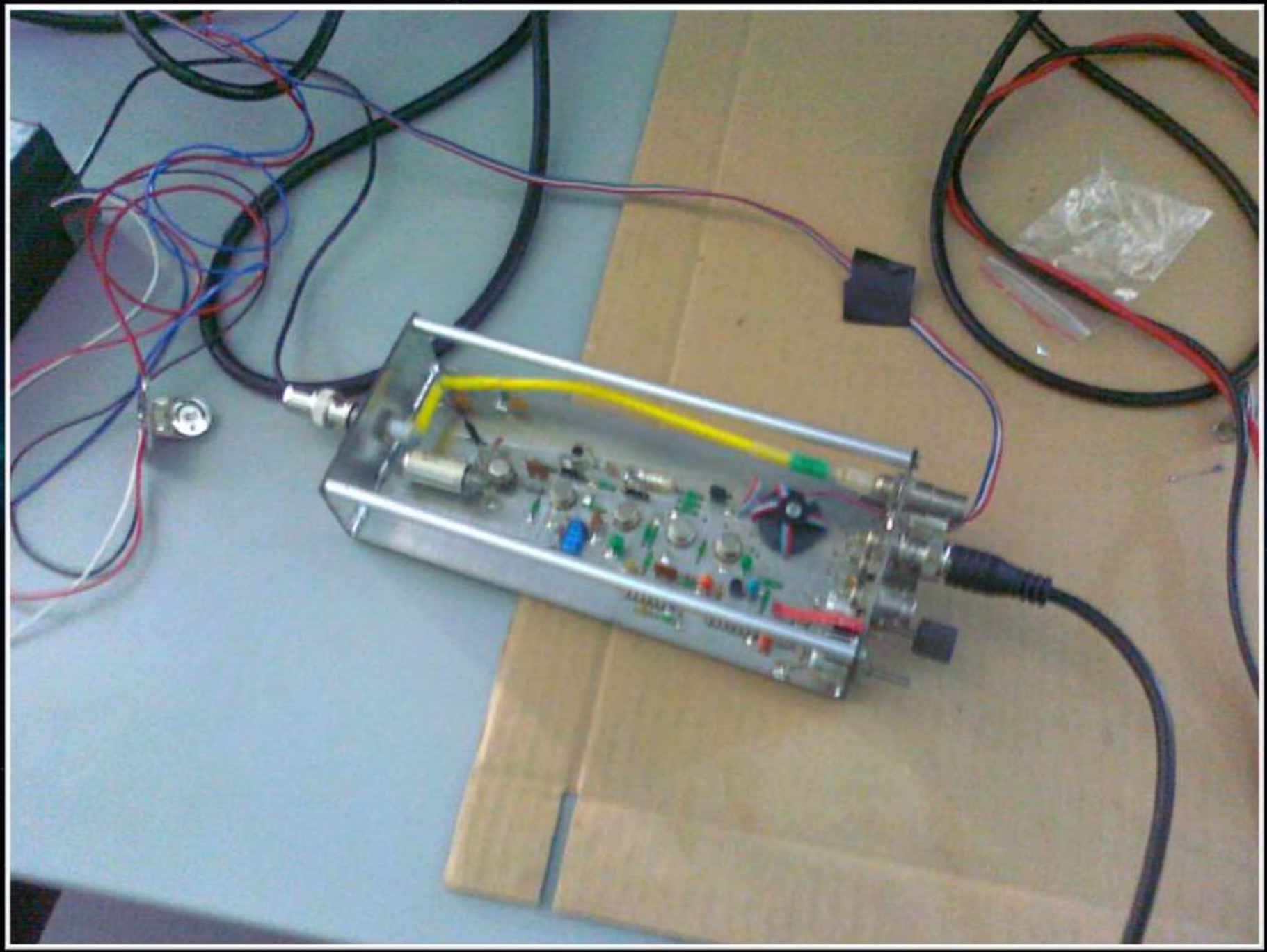
Bloková schéma pristroja pre CubeSat.

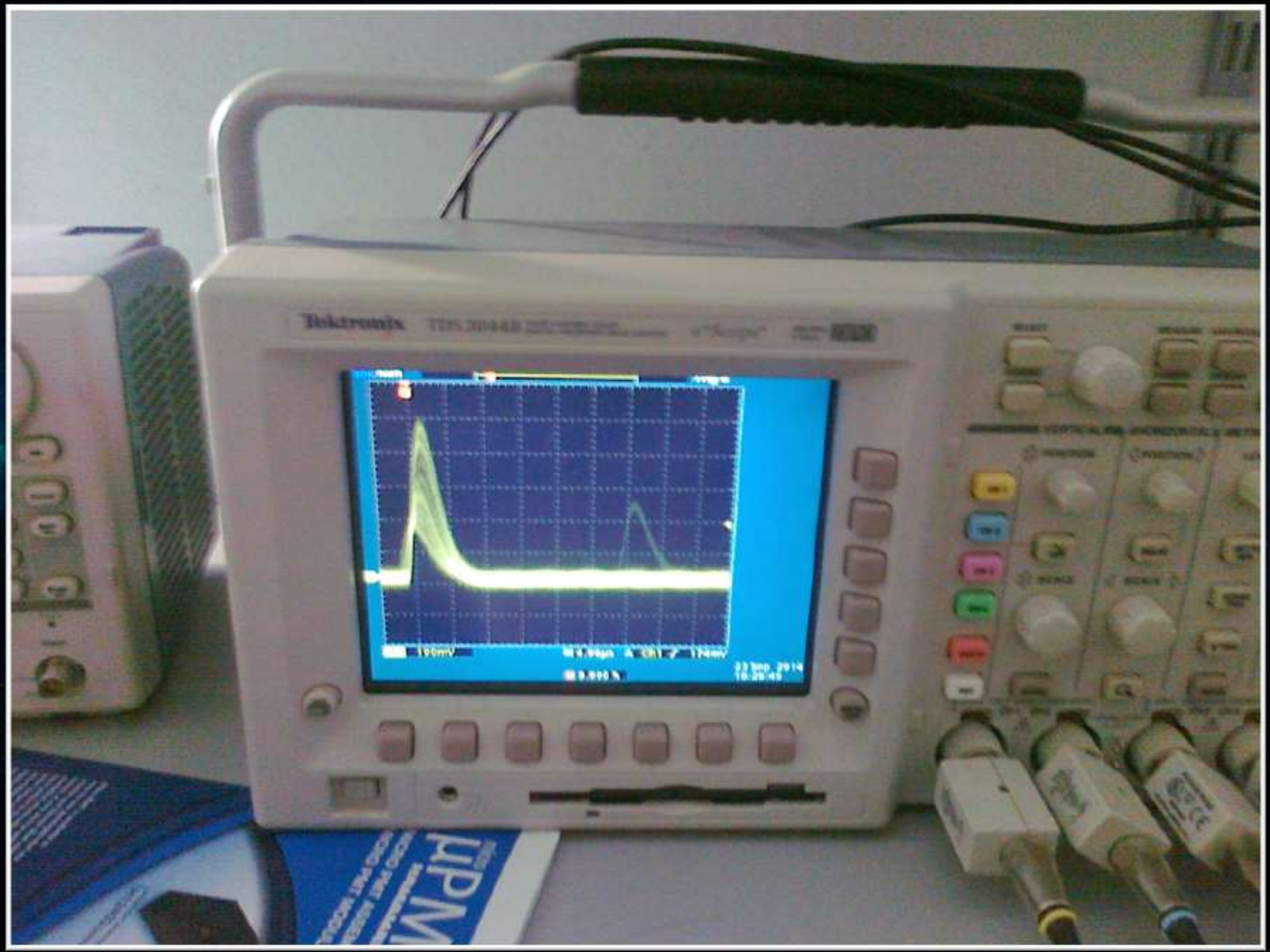


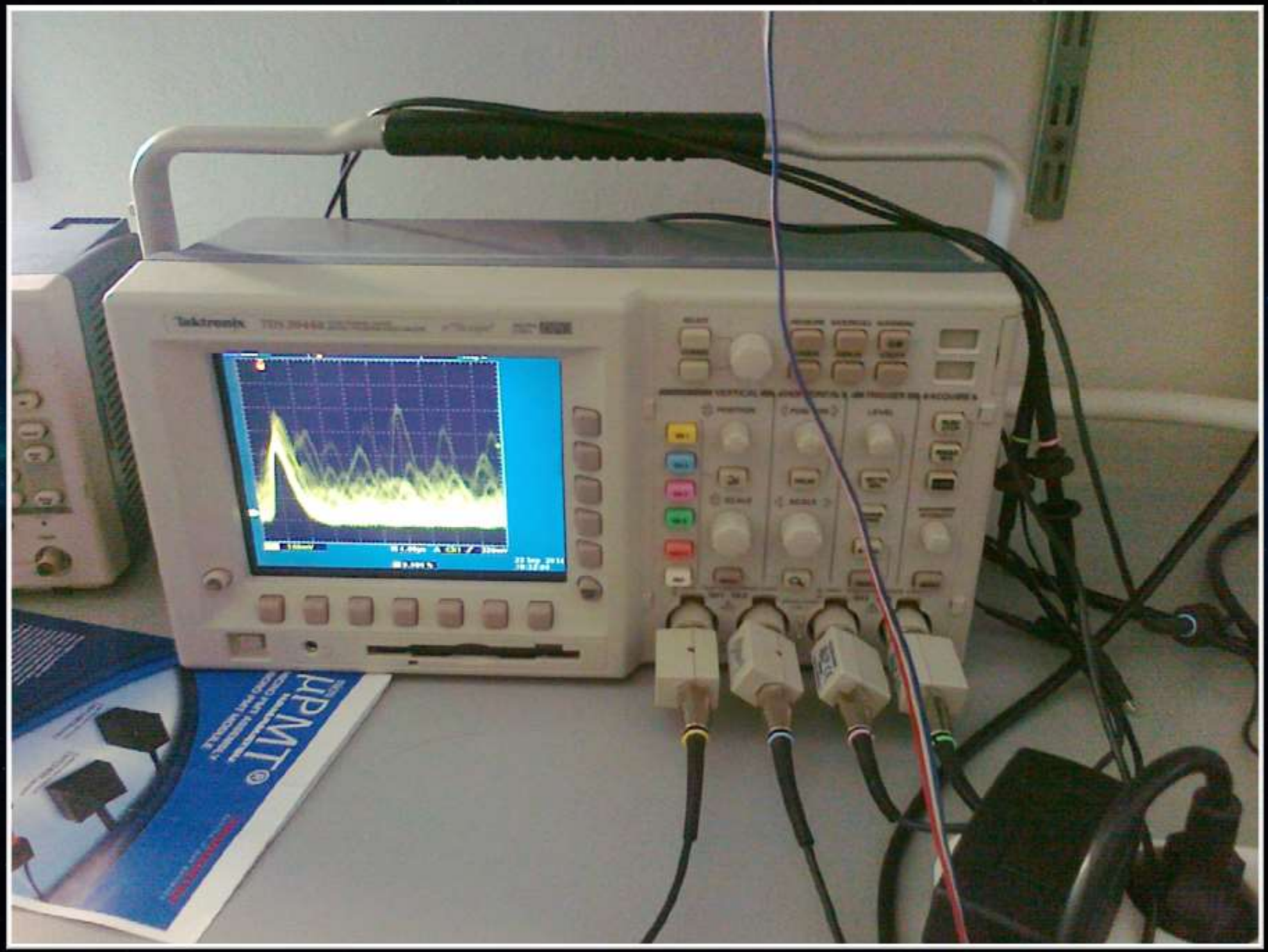
µPMT HAMAMATSU H1240x.








Tektronix


Tektronix

Ďakujem za pozornosť.