2.2 MeV All-Sky Imaging

Present Procedure:

- **Use BGDLNE as a background modeling procedure.**
- **Validation using Crab and solar flare data.**
- **Compare maps generated with SRCLIK/BGDLNE and with SKYMEM/BGDLNE.**

Since Last Team Meeting :

- **Developed procedure for automating DRI data generation, based on latest standard (MPE) SKYDRI processing.**
- **Developed procedure for automating DRB data generation.**
- **First SKYMEM images generated in October.**
- **Images are not clean. Not yet understood.**
- **Have started work to modify the background modeling to explicitly include internal 2.2 MeV background.**
- **Have also begun to generate a 1.8 MeV map as a cross-check on the procedure.**

Automated Processing of DRI/DRB Data

- **Developed procedure for automating DRI data generation.**
- **Scripts have been set-up based on COMPASS command-line tool and standard (MPE) SKYDRI processing.**
- **Scripts can be easily edited to generate VP-by-VP DRI data for any particular energy range.**
- **Script is also available for automating the BGDLNE task for each VP. This allows for generating data with alternative parameters.**
- **SKYADL is used to sum DRI data.**
- **All DRI data for VPs 1 – 523 have now been generated. This provides (for the first time!) a consistent set of DRI data.**

Possible DRI DAL-Layer Problem??

- **Several of the DRI jobs (SKYDRI, SKYADR, SKYADL) resulted in corrupted DRI data.**
- **The .TEM file output looks ok, but the sum of the DRI data cube results in unrealistic values.**
- **A check can be made to compare the expected sum (as usually given in the .TEM file) with the sum derived directly from the data (MFITS).**
- **The process of checking several hundred data files is rather tedious. Much of the procedure has been automated using EXPECT scripts to access MFITS for a list of input data files.**
- **The problem appears to be random in nature.**
- **Typically, re-running the job will result in correction of the problem.**
- **Since it has occured in more than one task, the suspected culprit is the DRI output DAL (initialization problem?).**
- **It has not yet been determined whether this is site-specific or whether it is collaboration-wide.** ***SPR to be issued.***

Modified Background Modeling

- **Present procedure based on BGDLNE.**
- **BGDLNE alone is probably not adequate to completely model this region of the spectrum.**
- **Need an independent model for the internal 2.2 MeV background.**
- **Modified procedure will be based on:**
  - **BGDLNE to provide model for the underlying continuum.**
  - **SIM to provide model for the internal 2.2 MeV background. Requires the development of a new task (SIMDRI) to properly convert simulated data into a 3-d dataspace which is relevant for a given observation (i.e., a particular DRX, DRG).**
- **SRCLIK would then be used with two background components for imaging.**

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Future Work

- **Complete SIMDRI task to properly incorporate simulated data for the internal background.**
- **Apply new method to solar imaging.**
- **Refine method and define appropriate parameters using solar imaging.**
- **Cross-check new method with the Crab.**
- **Regenerate all-sky maps with new procedure.**

AAS Meeting

- **Abstract has been submitted for January meeting (Toronto).**
- **Poster presentation.**
- **Will make a decision by Christmas as to whether abstract should be withdrawn. Report will be distributed to the team before that time.**