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Proposal for *Compton* GRO Guest Investigation

CGRO-99-043

Cover Form

NRA 99-OSS-02

PI Name DR. MARK L. MCCONNELL <small>Title First name Middle initial Last name</small>				Date 1999-05-05
PI Institution UNIVERSITY OF NEW HAMPSHIRE				
Department SPACE SCIENCE CENTER				
Street Address MORSE HALL				
City DURHAM	State NH	Country USA	Postal Code 03824	
Telephone 603-862-2047		Fax 603-862-4685		
E-mail address MARK.MCCONNELL@UNH.EDU				
Proposal Title LONG DURATION SOLAR OBSERVATIONS WITH COMPTEL				
Proposal Type <input checked="" type="checkbox"/> Y Type 1 Analysis of Archival Data <input type="checkbox"/> N Type 3 Correlative Research <input checked="" type="checkbox"/> Y Type 2 Request for Observing Time <input type="checkbox"/> N Type 4 Service Proposal				
Subject Category SOLAR FLARES				
Estimate of Total Project Cost \$ 15000				

Abstract: 1000 characters maximum (about 150 words).

The final report of the latest Astrophysics Senior Review indicated that the extended CGRO mission was, in part, motivated by the recognition that "CGRO will be an important observational tool during the upcoming solar maximum." COMPTEL provides unique capabilities for studying both 0.1-30 MeV solar flare gamma-rays and 20-200 MeV solar flare neutrons. With the next solar maximum expected to take place during Cycle 9, it is imperative that we maximize our exposure to the Sun during this time. Long, uninterrupted exposures to the Sun offer many advantages over the use of ToO s. Our proposal provides several means of achieving prolonged solar exposures with COMPTEL (as well as OSSE and EGRET) while, at the same time, providing useful non-solar data. The principle part of our proposal is to observe the Sun during three 6-week observations that also provide improved all-sky coverage for COMPTEL. In addition, we propose several strategies for further solar observations during Cycle 9.

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General Form

NRA 99-OSS-02

PI Name DR. MARK L. MCCONNELL <small>Title First name Middle initial Last name</small>	Date 1999-05-05
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Proposal Title LONG DURATION SOLAR OBSERVATIONS WITH COMPTTEL
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Co-Investigators			
Last name	First name	Institution	Country
RYAN	JAMES	UNH	USA
STEINLE	HELMUT	MPE	GERMANY
SCHOENFELDER	VOLKER	MPE	GERMANY
BENNETT	KEVIN	SSD/ESA	NETHERLANDS
HERMSEN	WIM	SRON-UTRECHT	NETHERLANDS
RANK	GERHARD	MPE	GERMANY
KANBACH	GOTTFRIED	MPE	GERMANY
MURPHY	RONALD	NRL	USA
SHARE	GERALD	NRL	USA
BERTSCH	DAVID	NASA/GSFC	USA

PI Institution UNIVERSITY OF NEW HAMPSHIRE
Administrative Authority (optional)
Administrator (optional)
<div style="display: flex; justify-content: space-between;"> Signature: Date: </div>

Statement as to the desired affiliation with Instrument Team or special access to proprietary data. PI IS A MEMBER OF THE COMPTTEL TEAM.

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Observation Definition Form

NRA 99-OSS-02

#	Target Name	RA	DEC	L _{II}	B _{II}	Instrument	Mode	Min. expos.
1	SUN	00 49 41.3	+00 52 06.9	122.0000	-62.0000	CEO	0	1.00 wks.
2	SUN	01 19 28.7	+00 02 55.0	138.0000	-62.0000	CEO	0	1.00 wks.
3	SUN	01 44 19.5	+04 22 49.9	147.0000	-56.0000	CEO	0	1.00 wks.
4	SUN	02 09 15.4	+09 16 30.7	153.0000	-49.0000	CEO	0	1.00 wks.
5	SUN	02 36 21.8	+11 11 27.2	160.0000	-44.0000	CEO	0	1.00 wks.
6	SUN	03 05 46.2	+13 23 31.3	166.0000	-38.0000	CEO	0	1.00 wks.
7	SUN	07 50 29.5	+15 44 43.6	205.0000	20.0000	CEO	0	1.00 wks.
8	SUN	08 01 58.7	+16 55 51.4	205.0000	23.0000	CEO	0	1.00 wks.
9	SUN	08 32 14.9	+15 07 20.2	210.0000	29.0000	CEO	0	1.00 wks.
10	SUN	09 01 55.4	+13 36 19.3	215.0000	35.0000	CEO	0	1.00 wks.
11	SUN	09 27 20.1	+12 04 33.8	220.0000	40.0000	CEO	0	1.00 wks.
12	SUN	09 52 18.3	+11 00 09.8	225.0000	45.0000	CEO	0	1.00 wks.
13	SUN	00 49 41.3	+00 52 06.9	122.0000	-62.0000	CEO	0	1.00 wks.
14	SUN	01 19 28.7	+00 02 55.0	138.0000	-62.0000	CEO	0	1.00 wks.
15	SUN	01 44 19.5	+04 22 49.9	147.0000	-56.0000	CEO	0	1.00 wks.
16	SUN	02 09 15.4	+09 16 30.7	153.0000	-49.0000	CEO	0	1.00 wks.
17	SUN	02 36 21.8	+11 11 27.2	160.0000	-44.0000	CEO	0	1.00 wks.
18	SUN	03 05 46.2	+13 23 31.3	166.0000	-38.0000	CEO	0	1.00 wks.
19	SUN	17 45 37.2	-28 56 10.2	0.0000	0.0000	CEO	0	18.00 wks.
								wks.
								wks.
								wks.
								wks.
								wks.
								wks.

All relevant target information must be contained on or attached to this form. List targets in order of priority. Note that exposure assumes optimal instrument response. Descriptions of the instrument modes can be found in Appendix G, NRA 99-OSS-02. Use a separate line for each observing mode/exposure combination and for each instrument.

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Special Requirements Form

NRA 99-OSS-02

Special Requirements: Please indicate additional required scheduling constraints, special operational modes, or other special requests for any of the relevant targets from the above list. When including scheduling constraints for correlative or targeted observations, please include the widest possible window to facilitate scheduling. Stricter constraints will decrease the likelihood of a candidate target being scheduled.

[1] WE PROPOSE THAT THE EGRET SPARK CHAMBER BE TURNED ON FOR 3-12 HOURS WHENEVER A SOLAR FLARE TAKES PLACE WITH THE SUN WITHIN THE EGRET FOV. THE TURN-ON WILL BE BASED ON A SOLAR FLARE TRIGGER FROM BATSE. FURTHER DETAILS CAN BE FOUND IN A SEPARATE PROPOSAL BY D. BERTSCH. [2] IN ADDITION TO THE SPECIFIC OBSERVATIONS REQUESTED HERE, WE REQUEST THAT THE SCHEDULING OF ALL CGRO CYCLE 9 OBSERVATIONS INCORPORATE THE REQUIREMENT, WHENEVER POSSIBLE, OF HAVING THE SUN WITHIN 20 DEGREES OF THE COMPTTEL POINTING DIRECTION. (A MORE RELAXED CONTRAINT OF UP TO 50 DEGREES MAY ALSO PROVIDE USEFUL SOLAR RESULTS, BUT AT A REDUCED SENSITIVITY LEVEL.)