

Solar activity began the week at low levels with a C2/1f flare at 04/1635 UTC from Region 1109 (N22, L=065, class/area Eki/420 on 27 September) which was rotating off the west limb. Activity dropped to very low levels thereafter with just occasional B-class events. An asymmetric halo CME was observed at 06/0648 UTC, which appeared to originate from the northeast portion of the solar disk and was associated with a filament eruption. New Region 1112 (S18, L=202, class/area Hrx/050 on 10 October) rotated onto the disk on 09 October and was the source of the low-level B-class flare activity observed during the last few days of the period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at moderate levels on 04 October and decreased to normal background levels for 05-10 October.

The week began with quiet geomagnetic conditions. A solar sector boundary (from negative to positive) was observed on 05 October and was accompanied by a slightly enhanced interplanetary magnetic field, resulting in mostly quiet to unsettled levels with some isolated active and minor storm periods at some high latitude sites for 05-07 October. Another solar sector boundary (positive to negative) was observed late on 07 October, followed by yet another boundary crossing (negative to positive) on 10 October. Activity levels for 08-10 October were generally quiet with a few isolated unsettled periods and one isolated active period at high latitudes.

Space Weather Outlook

13 October – 08 November 2010

Solar activity is expected to be predominantly at very low levels. There is a possibility for brief intervals reaching low levels, depending on the emergence of new sunspot groups.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels during the period.

Geomagnetic field activity is expected to be mostly quiet. However, generally unsettled levels are expected for 16-17 October and 21-22 October due to recurrent high speed solar wind streams.



Daily Solar Data

Date	Radio Flux 10.7 cm	Sun spot No.	Sunspot Area (10 ⁻⁶ hemi.)	X-ray Background	Flares							
					X-ray Flux			Optical				
					C	M	X	S	1	2	3	4
04 October	76	23	110	A7.2	1	0	0	0	1	0	0	0
05 October	75	11	0	A6.1	0	0	0	0	0	0	0	0
06 October	74	0	0	A5.0	0	0	0	0	0	0	0	0
07 October	75	0	0	A5.5	0	0	0	0	0	0	0	0
08 October	75	11	0	A6.0	0	0	0	0	0	0	0	0
09 October	76	12	40	A6.1	0	0	0	0	0	0	0	0
10 October	76	13	50	A6.5	0	0	0	3	0	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ² -day-sr)			Electron Fluence (electrons/cm ² -day-sr)		
	>1 MeV	>10 MeV	>100 MeV	>.6 MeV	>2MeV	>4 MeV
04 October	5.7e+05	1.4e+04	3.6e+03		1.2e+07	
05 October	2.2e+05	1.4e+04	3.4e+03		2.4e+06	
06 October	1.7e+05	1.3e+04	3.1e+03		1.5e+06	
07 October	9.2e+04	1.4e+04	3.6e+03		1.5e+06	
08 October	8.4e+04	1.5e+04	3.8e+03		1.2e+06	
09 October	1.0e+05	1.4e+04	3.7e+03		1.3e+06	
10 October	1.8e+05	1.5e+04	3.5e+03		1.7e+06	

Daily Geomagnetic Data

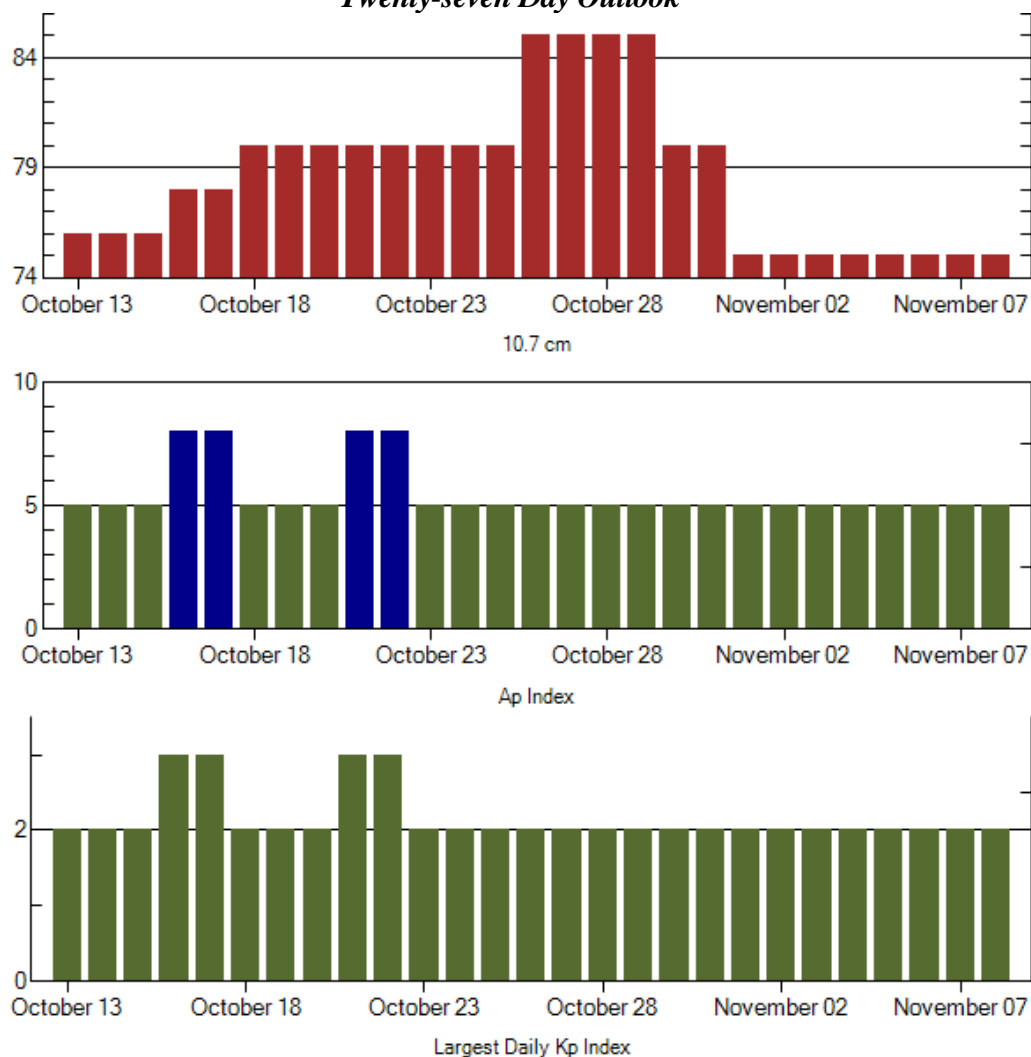
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
04 October	2	0-0-0-0-1-1-1-1	0	0-0-0-0-1-0-0-0	3	0-0-0-0-2-1-1-2
05 October	6	1-2-3-2-2-1-1-0	12	2-0-4-4-4-2-0-0	6	1-2-3-2-1-2-1-1
06 October	5	1-0-2-2-3-1-1-1	13	0-0-3-4-5-2-1-0	8	1-0-2-2-3-2-3-1
07 October	2	1-1-1-0-1-1-0-1	10	0-0-4-4-4-0-0-0	4	1-2-1-1-1-1-0-1
08 October	3	2-1-0-1-1-1-0-1	5	3-1-1-3-0-0-1-0	4	3-1-1-1-0-1-0-1
09 October	3	1-1-1-1-1-2-1-0	4	0-0-0-4-0-1-1-0	4	1-1-1-1-1-1-0-1
10 October	1	0-0-0-0-1-0-0-1	3	0-0-0-2-3-0-0-1	2	0-0-0-0-1-0-0-1

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
05 Oct 0759	WARNING: Geomagnetic K = 4	05 Oct 0815 - 1600



Twenty-seven Day Outlook



Date	Radio Flux 10.7 cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7 cm	Planetary A Index	Largest Kp Index
13 Oct	76	5	2	27 Oct	85	5	2
14	76	5	2	28	85	5	2
15	76	5	2	29	85	5	2
16	78	8	3	30	80	5	2
17	78	8	3	31	80	5	2
18	80	5	2	01 Nov	75	5	2
19	80	5	2	02	75	5	2
20	80	5	2	03	75	5	2
21	80	8	3	04	75	5	2
22	80	8	3	05	75	5	2
23	80	5	2	06	75	5	2
24	80	5	2	07	75	5	2
25	80	5	2	08	75	5	2
26	85	5	2				



Energetic Events

Date	Energy Events											
	Time			X-ray		Optical Information			Peak		Sweep Freq	
	$\frac{1}{2}$			Integ		Imp/	Location	Rgn	Radio Flux		Intensity	
	Begin	Max	Max	Class	Flux	Brtns	Lat CMD	#	245	2695	II	IV

No Events Observed

Flare List

Date	Time			X-ray	Imp /	Optical		Rgn
	Begin	Max	End			Location	Lat CMD	
04 October	0543	0557	0607	B1.8				1111
	0935	0940	0945	B3.8				1109
	1507	1510	1525	B1.2				1111
	B1634	U1634	1638	C2.3	1F	N21W77		1109
05 October	0750	0754	0759	B1.4				1111
	0840	0843	0846	B5.0				1109
	0851	0854	0857	B2.2				1111
	1044	1047	1051	B1.1				1109
	1116	1124	1130	B2.3				1109
	1219	1227	1232	B2.5				1109
	1901	1912	1918	B1.0				
06 October	No Flares Observed							
07 October	1841	1851	1859	B1.2				
	2340	2345	2357	B1.5				
08 October	0456	0501	0508	B1.6				
09 October	1755	1758	1803	B3.2				
10 October	0645	0646	0650	B2.3	SF	S22E61		1112
	0757	0804	0808	B1.2				
	0842	0843	0846	B1.8	SF	S21E59		1112
	0942	0943	0955	B5.5	SF	S19E57		1112
	1635	1639	1645	B1.2				
	1732	1735	1742	B1.1				



Region Summary

Date	Location		Sunspot Characteristics					Flares							
	° Lat ° CMD)	Helio	Area (10 ⁻⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			S	Optical			
		Lon						C	M	X		1	2	3	4
Region 1109															
20 Sep	N19E89	72						3							
21 Sep	N19E75	72	30	1	HRX	1	A	1							
22 Sep	N22E67	67	200	10	DAO	4	B								
23 Sep	N22E54	67	210	9	DSO	12	B				2				
24 Sep	N22E41	66	280	13	EHO	12	B								
25 Sep	N22E27	67	280	14	EH	18	BG								
26 Sep	N21E14	66	360	14	ESI	22	B				2				
27 Sep	N22E02	65	420	13	EKI	20	B				1				
28 Sep	N22W11	65	280	13	EAI	12	B								
29 Sep	N22W24	65	310	13	EH	13	B				1				
30 Sep	N21W39	67	240	7	DHI	11	B				2				
01 Oct	N21W51	65	270	9	DHO	11	B				1				
02 Oct	N21W65	66	320	10	CKO	8	B								
03 Oct	N20W80	68	220	4	HAX	3	A								
04 Oct	N21W93	69	90	3	HAX	1	A	1				1			
								5	0	0	9	1	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 65

<i>Region 1111</i>															
29 Sep	N23E55	346	10	1	AXX	1	A								
30 Sep	N24E42	345	10	1	AXX	1	A								
01 Oct	N20E30	343	10	6	BXO	2	B								
02 Oct	N24E21	340	30	4	CRO	3	B								
03 Oct	N24E06	341	30	4	DRO	5	B								
04 Oct	N24W05	341	20	5	DSO	2	B								
05 Oct	N22W18	341		1	AXX	1	A								
06 Oct	N22W31	341													
07 Oct	N22W44	341													
08 Oct	N24W56	339		1	AXX	1	A								
09 Oct	N24W68	337													
10 Oct	N24W81	337													
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 341



Region Summary-Continued

Date	Location		Sunspot Characteristics					Flares							
	(° Lat ° CMD)	Helio	Area (10 ⁻⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
		Lon						C	M	X	S	1	2	3	4
<i>Region 1112</i>															
09 Oct	S18E65	204	40	1	HRX	2	A								
10 Oct	S18E54	202	50	2	HRX	3	A					3			
								0	0	0	3	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 202

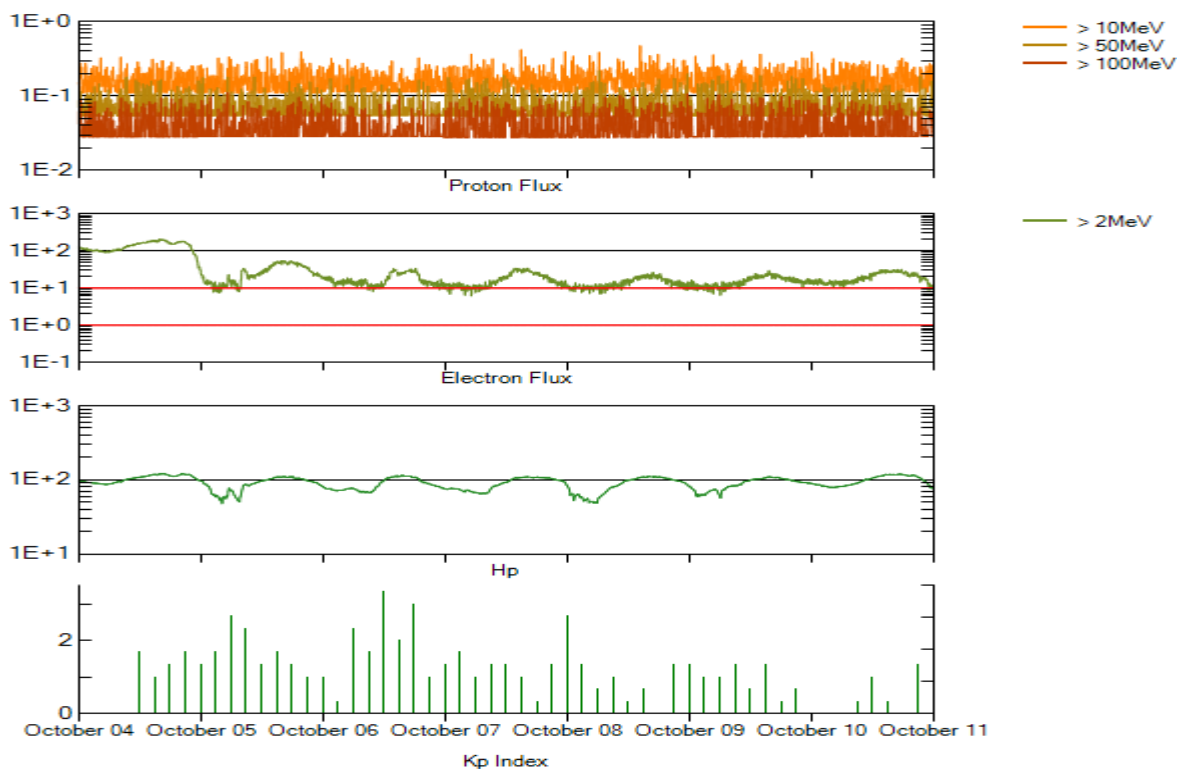


Recent Solar Indices (preliminary)
Of the observed monthly mean values

Month	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values	Ratio	Smooth values			Penticton	Smooth	Planetary	Smooth
	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
2008									
October	5.2	2.9	0.56	2.9	1.8	68.3	68.2	7	5.4
November	6.8	4.1	0.60	2.7	1.7	68.6	68.3	4	5.1
December	1.3	0.8	0.62	2.7	1.7	69.2	68.5	4	4.9
2009									
January	2.8	1.3	0.46	3.0	1.8	69.8	68.7	4	4.7
February	2.5	1.4	0.56	3.1	1.9	70.0	68.8	5	4.7
March	0.7	0.7	1.00	3.4	2.0	69.2	69.0	5	4.6
April	1.2	0.8	1.00	3.7	2.2	69.7	69.3	4	4.3
May	3.9	2.9	0.74	3.8	2.3	70.5	69.7	4	4.1
June	6.6	2.9	0.39	4.4	2.7	68.6	70.2	4	4.0
July	5.0	3.2	0.70	5.8	3.6	68.2	71.0	4	3.9
August	0.3	0.0	0.00	7.7	4.8	67.4	72.1	5	3.8
September	6.6	4.3	0.64	9.9	6.2	70.5	73.3	4	3.8
October	7.0	4.8	0.66	11.3	7.1	72.3	74.1	3	4.1
November	7.7	4.1	0.55	12.4	7.6	73.6	74.5	3	4.5
December	15.7	10.8	0.68	13.6	8.3	76.8	74.9	2	4.8
2010									
January	21.3	13.2	0.62	14.8	9.3	81.1	75.5	3	5.0
February	31.0	18.8	0.60	16.7	10.6	84.7	76.5	5	5.1
March	24.7	15.4	0.62	19.1	12.3	83.3	77.5	5	5.3
April	11.2	7.9	0.71			75.9		10	
May	19.9	8.8	0.44			73.8		8	
June	17.9	13.5	0.75			72.6		7	
July	23.1	16.1	0.70			79.9		5	
August	28.2	19.6	0.70			79.7		8	
September	35.6	25.2	0.71			81.1		5	

NOTE: Values are final except for the most recent 6 months which are considered preliminary. Cycle 23 started in May 1996 with an RI=8.0. Cycle 23 maximum was April 2000 with an RI=120.8. Solar minimum, marking the start of Cycle 24, was December 2008.





Weekly Geosynchronous Satellite Environment Summary
Week Beginning 04 October 2010

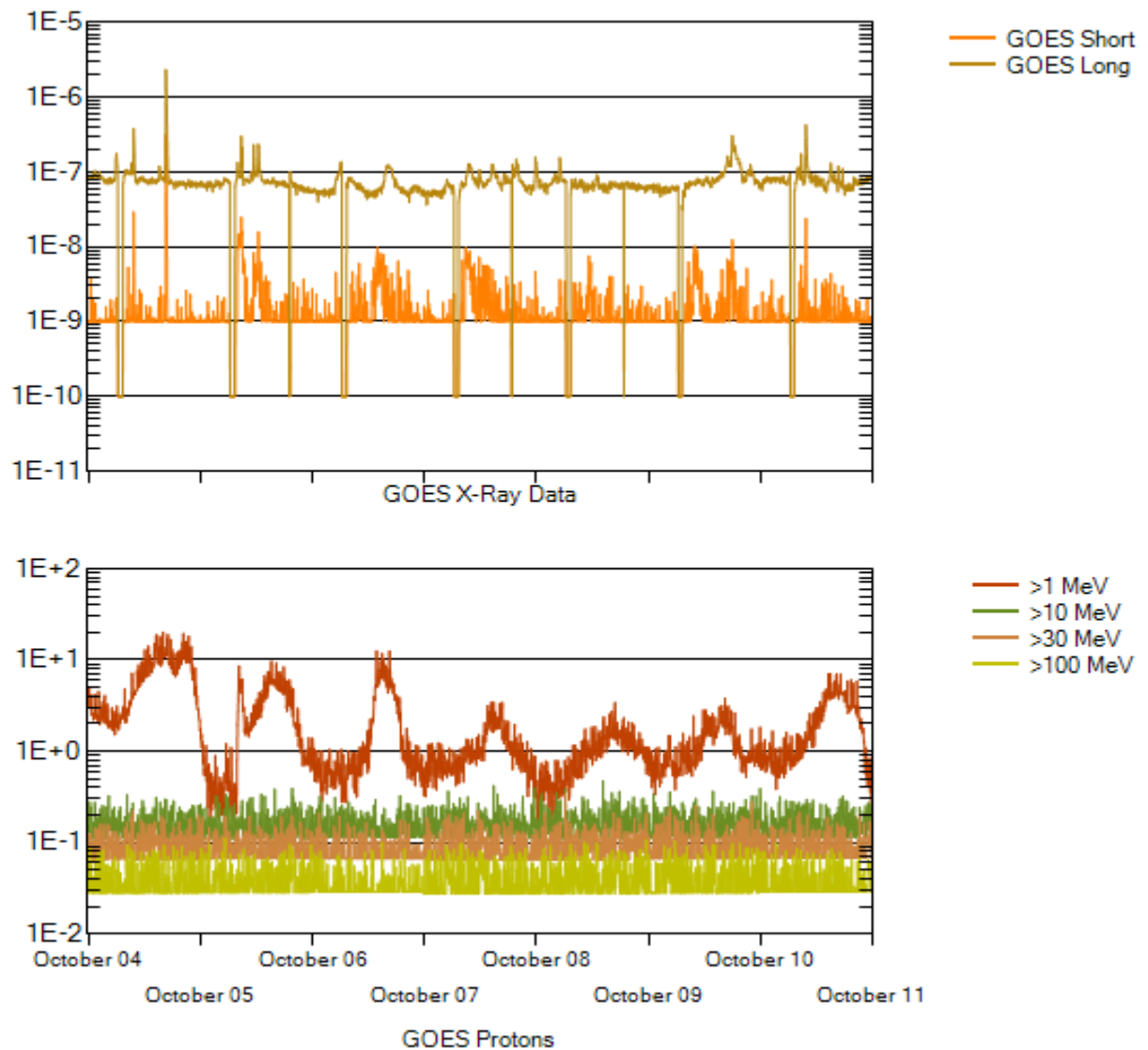
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²–sec–sr) as measured by GOES-13 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV. The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²–sec–sr) with energies greater than 2 MeV at GOES-13.

The Hp plot contains the five minute averaged Hp magnetic field component in nanoteslas (nT) as measured by GOES-13. The Hp component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

Kp plot contains the estimated planetary 3-hour K-index (derived by the Air Force Weather Agency) in real time from magnetometers at Meanook, Canada; Sitka, AK; Glenlea, Canada; St. Johns, Canada; Ottawa, Canada; Newport, WA; Fredericksburg, VA; Boulder, CO; Fresno, CA and Hartland, UK. These data are made available through cooperation from the Geological Survey of Canada (GSC), British Geological Survey (BGS) and the US Geological Survey. These may differ from the final Kp values derived from a more extensive network of magnetometers.

The data included here are those now available in real time at the SWPC and are incomplete in that they do not include the full set of parameters and energy ranges known to cause satellite operating anomalies. The proton and electron fluxes and Kp are “global” parameters that are applicable to a first order approximation over large areas. H parallel is subject to more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.





Weekly GOES Satellite X-ray and Proton Plots

The x-ray plot contains five-minute averaged x-ray flux (Watts/m^2) as measured by GOES 14 (W105) in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged integral proton flux ($\text{protons/cm}^2\text{-sec-sr}$) as measured by GOES-13 for each of the energy thresholds: >1, >10, >30 and >100 MeV. P10 event threshold is 10 pfu ($\text{protons/cm}^2\text{-sec-sr}$) at greater than 10 MeV.

