

8 March 2020

Here are some examples of flux variations seen in QuarkNet CRDs. Most of these are associated with atmospheric pressure variations that accompany storms. At the bottom are examples of effects associated with solar activity. There are also some examples of instrumental effects; students should be made aware of these if they look for flux variations. Finally there are some mystery variations.

data during the storms in late Nov. 2019
plot file variations
winamac6130nov2019 6% variations
winamac6401nov2019

data from "bomb cyclone" in March 2019
ottawa6793mar2019a 7% increase 3/12-14

East Coast "bomb cyclone" on 4 Jan. 2018
medford6865jan2018 5% increase on 1/4
storm in Hawaii on 25 Dec. 2019
byuh6993dec2019 2% increase on 12/25

Jan. 2020 storm in Midwest
fnal6119jan2020 peak at 1/19, dips at 1/17 & 1/21
nth6200jan2020
winamac6130jan2020 & winamac6130jan13to20
winamac6401jan2020 & winamac6401jan13to20

instrumental and/or rare effects
ntonawanda6223nov2019 channel 2 singles rate peaks every 24 hours
flux & channel 4 singles rate drop on 2/5 & 2/6
maui6231feb4to7 flux & channel 4 singles rate drop on 2/29
maui6231mar2020 large drop near 1/28 due to channel 2
abilene6470jan2020 variations 1/15-20 due to pressure variations
fnal6119sep2017ch2 variation with 24-hr period for channel 2 flux
and singles rate

mystery variations
punahoufeb7to8 high flux values 3 times on 2/7 & 2 times on 2/8
punahoufeb7binlmin high flux values for a few minutes
punahoufeb8binlmin
manhattan6314jan2 large variations on 1-min time scale

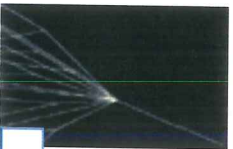
X class solar flares & CME (coronal mass ejection) in Sept. 2017

DAQ	group	state	UHManoa flux plot	geom	coinc
6119	Fermilab	IL	fnal6119sep2017 fnal6119sep2017a fnal6119sep2017ch2	unst	2-fold 1+3/2+4
6689	Grace HS	ID	gracehs6689sep2017	st	3-fold
6423	Shizuoka HS	JAP	shizuoka6423sep2017	st	4-fold
combined CRDs					
6689+6119+6423			fnalgraceshizuokasep2017		

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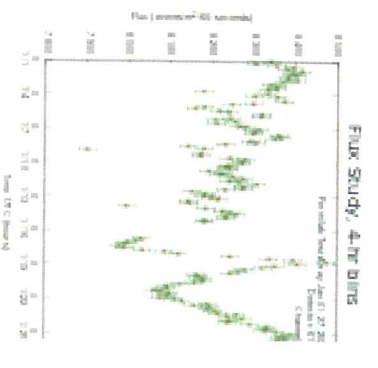
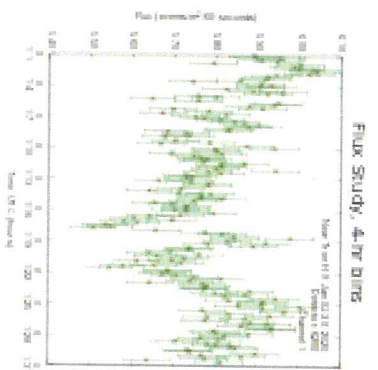
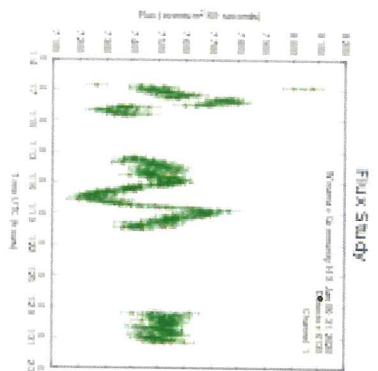
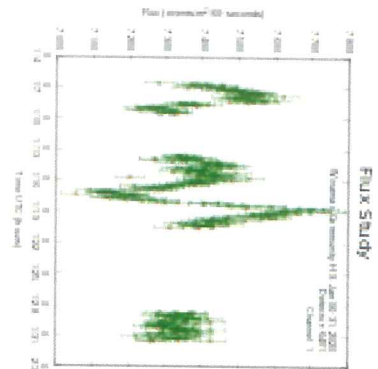


jan2020

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winamac6401jan2020

Group: UHManoa

Created: 2020-01-31 11:08:12.888

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winamac6130jan2020

Group: UHManoa

Created: 2020-01-31 11:02:38.348

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nths6200jan2020

Group: UHManoa

Created: 2020-01-31 10:52:11.249

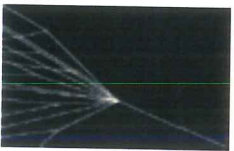
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fna16119jan2020

Group: UHManoa

Created: 2020-01-28 21:32:.

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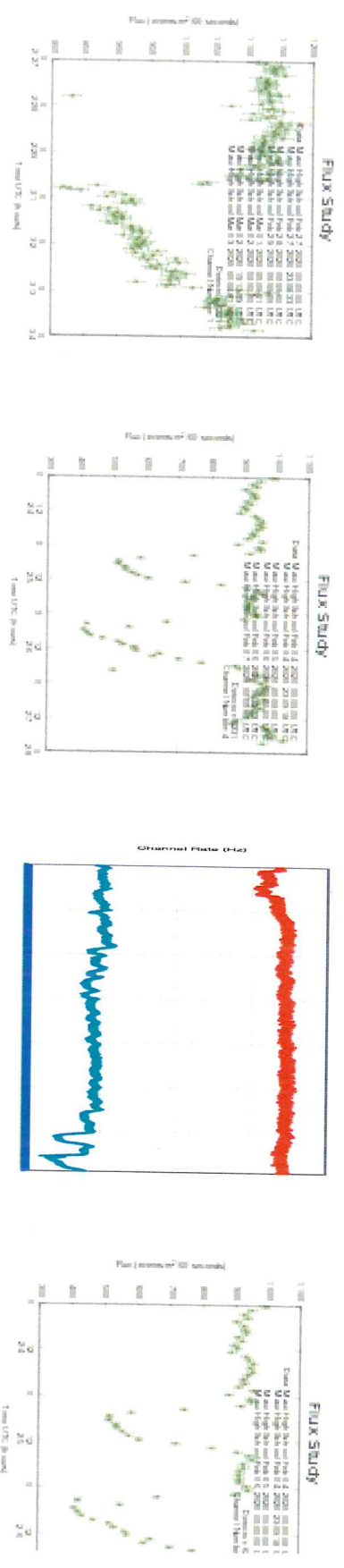
Filename

maui6231

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maui6231mar2020
Group: UHMManoa
Created: 2020-03-04 13:38:12.953
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maui6231feb4to7
Group: UHMManoa
Created: 2020-02-08 09:23:16.585
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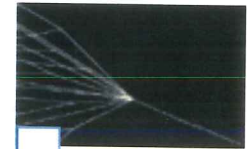
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Group: UHMManoa
Created: 2020-02-07 11:29:04.397
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maui6231feb4to6
Group: UHMManoa
Created: 2020-02-07 11:14:
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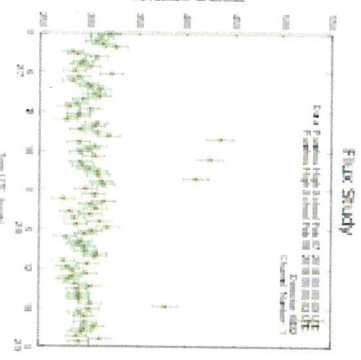
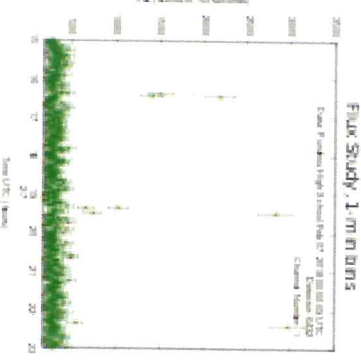
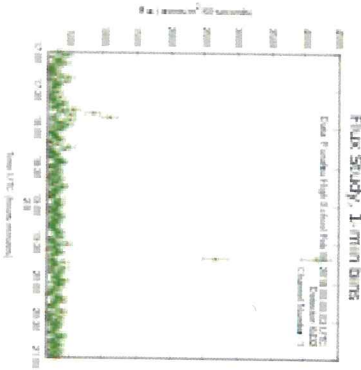


punahoufeb

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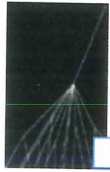
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punahoufeb8bin1min
 Group: UHMManoa
 Created: 2018-03-04 11:54:12-289
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punahoufeb7bin1min
 Group: UHMManoa
 Created: 2018-03-04 11:48:56-923
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punahoufeb7to8
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 Created: 2018-03-03 10:47:03-489
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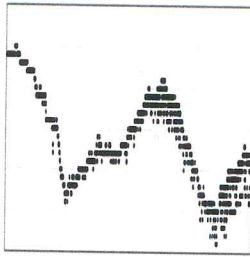
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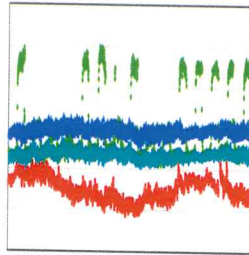
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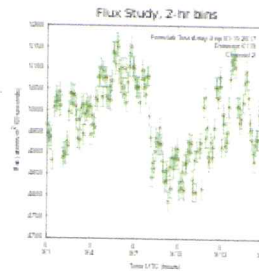
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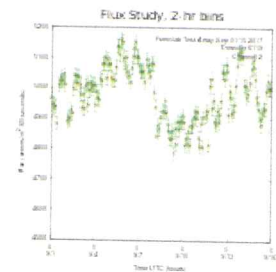
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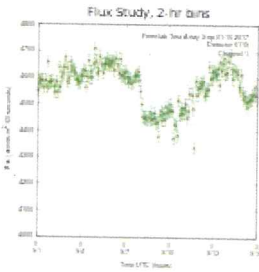
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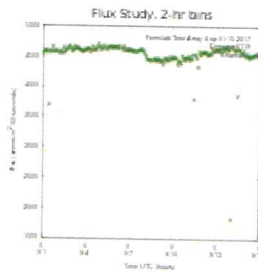
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fnal6119sep2017ch2
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fnal6119sep2017a
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