

Quarknet Analysis Update

October 31, 2005

Summer 2005 Data
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Analysis Procedure

In order to determine if an air shower occurred, we:

- Looked at every summer 05 data file using the Quarknet portal "performance" feature.
- Blessed all files with an acceptable time over threshold curve
- Analyzed all blessed data using the Quarknet portal "shower" feature; displaying only events occurring in at least two detectors within a 100 ns gate.

Analysis Results

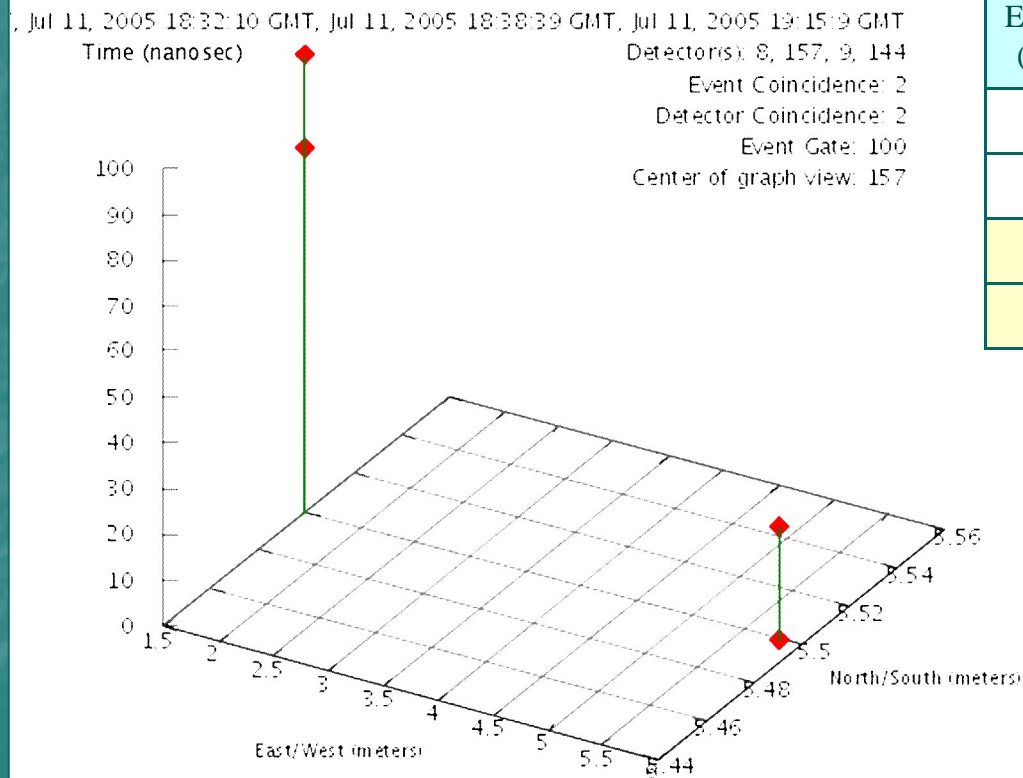
The graphs on the following slides show the results of the shower analysis.

- Figure 1 is an example of the typical shower study result; one coincidence event in each of two detectors
- Figure 2 is the plot of a potential air shower with 5 coincidence events in two detectors
- Figures 3 and 4 show the beginning and continuation of 5 coincidence events in two detectors. This potential shower seems to have started in one 100 ns gate and finished in the next 100 ns gate.

The analysis of these two possible air showers continues

Typical Shower Plot

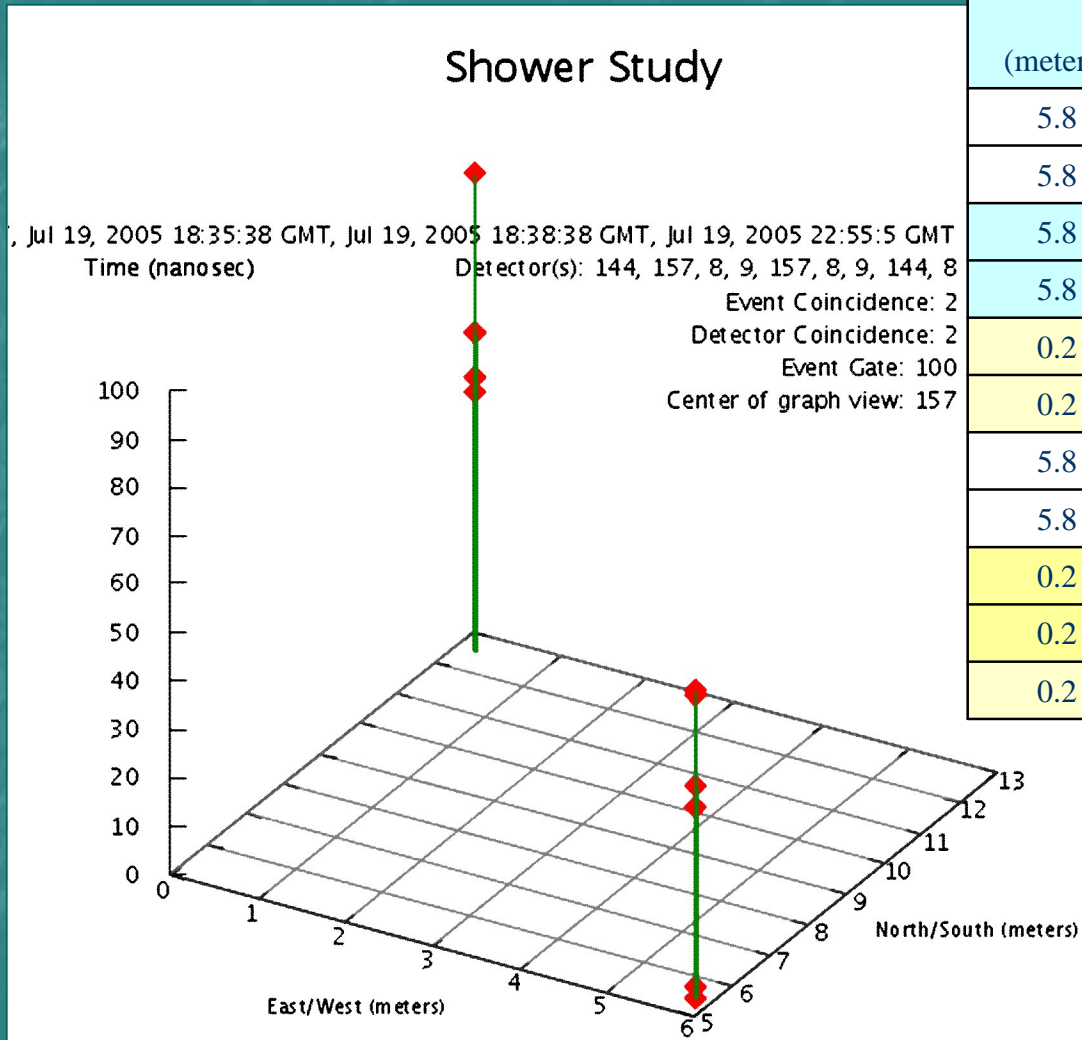
Shower Study



East/West (meters)	North/South (meters)	Time (nanosec)	Detector	Channel
5.8	5.5	0.0	9	2
5.8	5.5	24.8	9	1
1.5	5.5	79.5	144	2
1.5	5.5	99.8	144	1

Figure 1

Possible Air Shower



East/West (meters)	North/South (meters)	Time (nanosec)	Detector	Channel
5.8	5.5	0	9	1
5.8	5.5	2.2	9	2
5.8	5.5	39	9	1
5.8	5.5	43.5	9	2
0.2	12.6	53.2	8	1
0.2	12.6	56.2	8	2
5.8	5.5	62.2	9	1
5.8	5.5	63	9	2
0.2	12.6	65.3	8	1
0.2	12.6	65.3	8	2
0.2	12.6	98.2	8	1

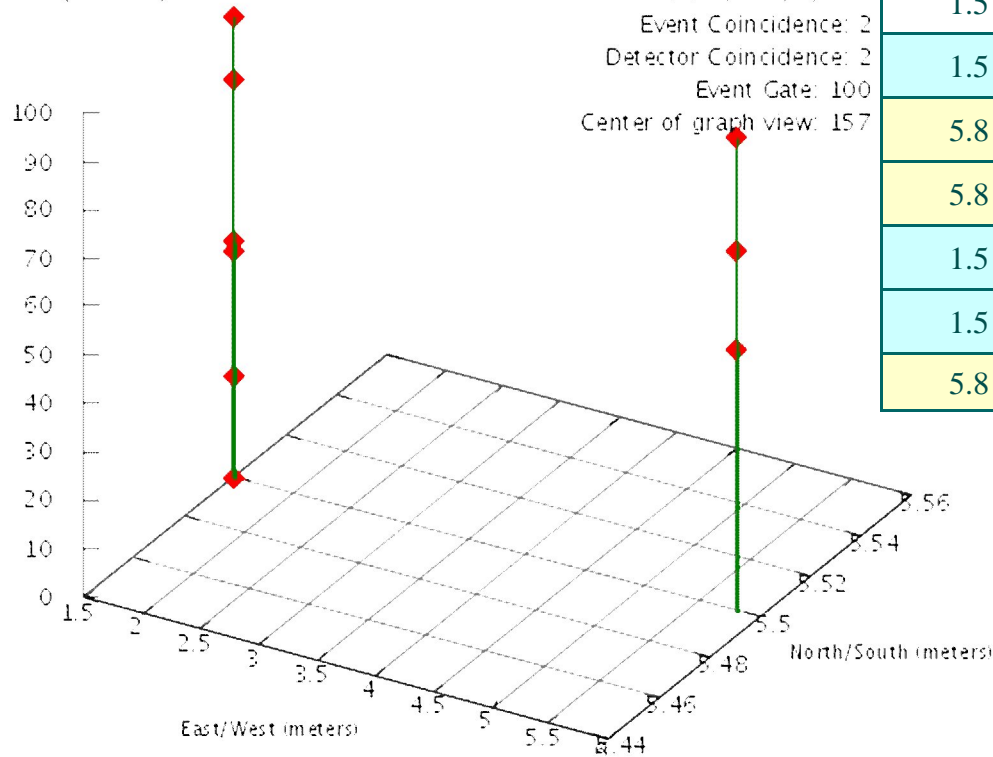
Figure 2

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Best Possible Air Shower

Shower Study

Jul 11, 2005 18:32:10 GMT, Jul 11, 2005 18:38:39 GMT, Jul 11, 2005 19:15:19 GMT
 Time (nanosec)



East/West (meters)	North/South (meters)	Time (nanosec)	Detector	Channel
1.5	5.5	0.0	144	2
1.5	5.5	21.0	144	2
1.5	5.5	46.5	144	1
1.5	5.5	48.7	144	2
5.8	5.5	54.0	9	2
5.8	5.5	74.2	9	2
1.5	5.5	81.8	144	2
1.5	5.5	94.5	144	1
5.8	5.5	97.5	9	1

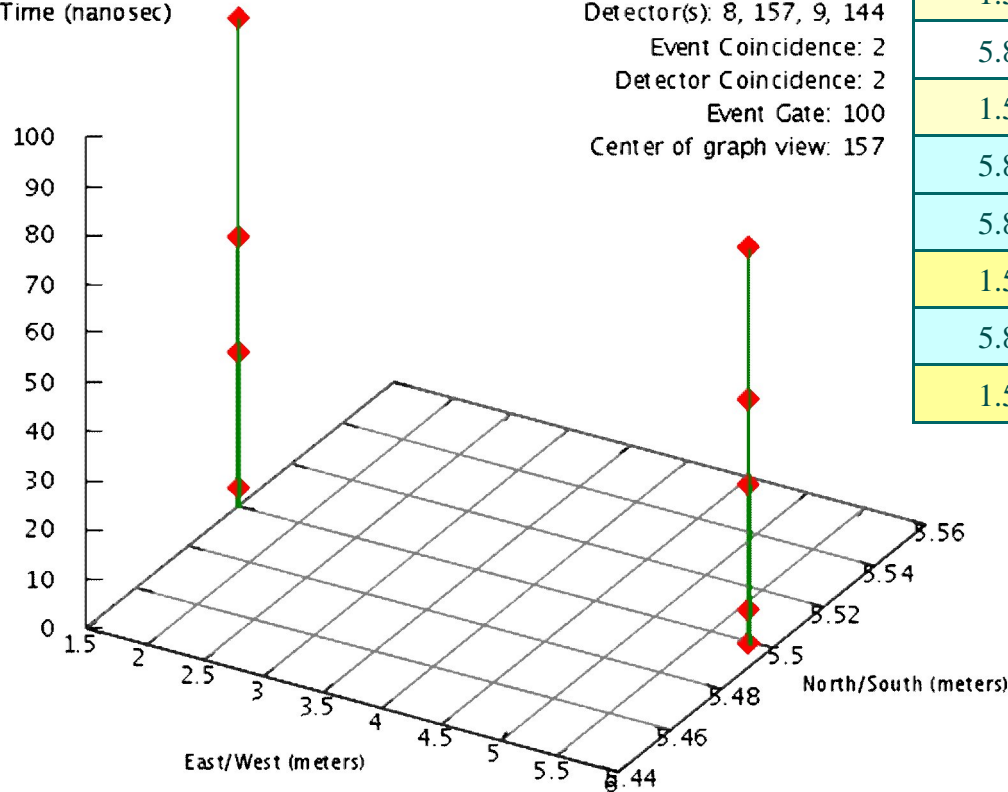
Figure 3

July 11 19:51:53

Best Possible Air Shower Cont.

Shower Study

, Jul 11, 2005 18:32:10 GMT, Jul 11, 2005 18:38:39 GMT, Jul 11, 2005 19:15:9 GMT
 Time (nanosec)
 Detector(s): 8, 157, 9, 144
 Event Coincidence: 2
 Detector Coincidence: 2
 Event Gate: 100
 Center of graph view: 157



East/West (meters)	North/South (meters)	Time (nanosec)	Detector	Channel
5.8	5.5	0.0	9	2
1.5	5.5	3.8	144	2
5.8	5.5	6.8	9	1
1.5	5.5	31.5	144	1
5.8	5.5	32.3	9	2
5.8	5.5	49.5	9	2
1.5	5.5	54.8	144	2
5.8	5.5	80.3	9	2
1.5	5.5	99.0	144	2

Figure 4

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