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Title: Mapping The Brightness Of The Ocean Bottoms

Author(s): Milazzo, Damien Michael

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Mapping The Brightness Of The Ocean Bottoms

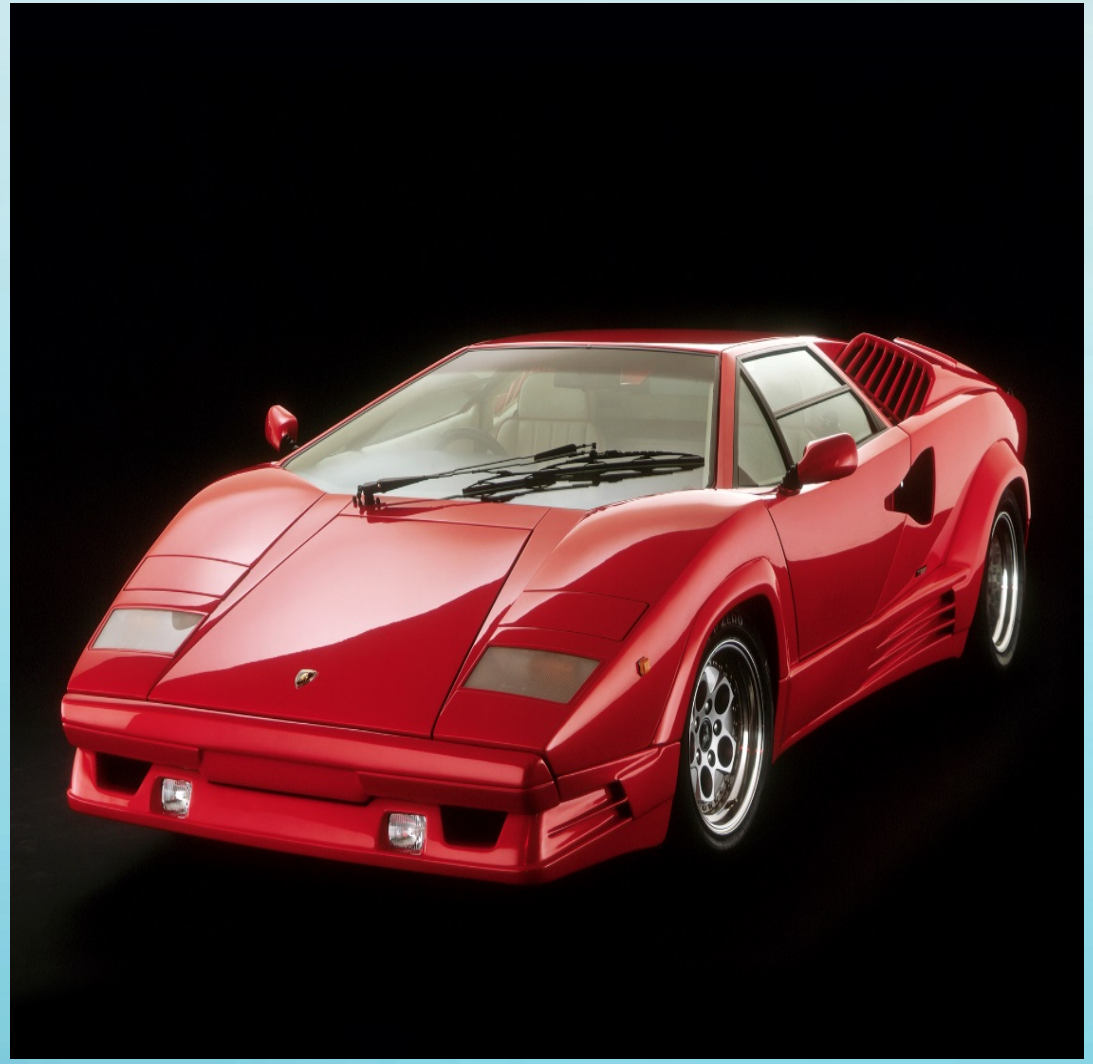
Discovering the Ocean From A Large Beach!

Damien Milazzo

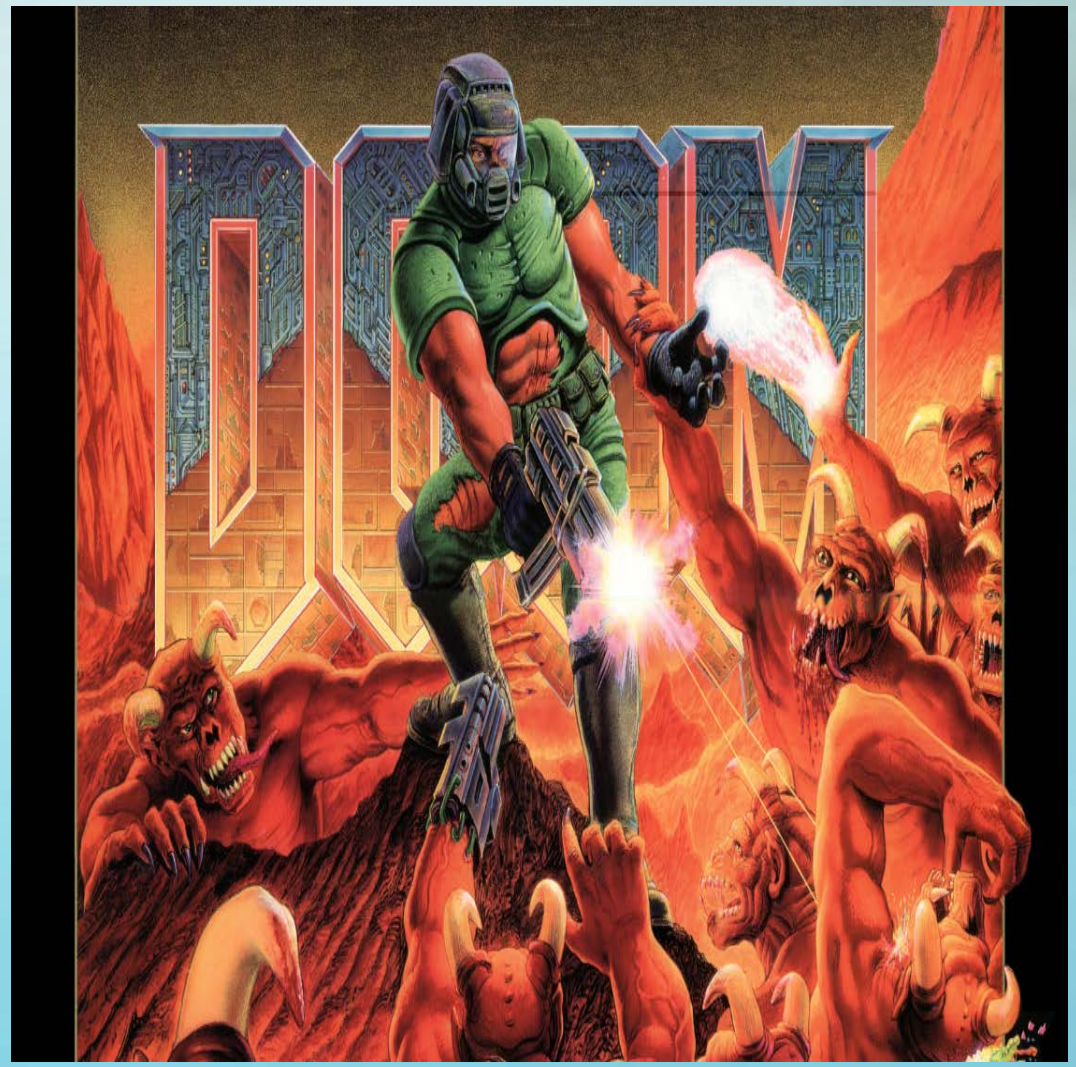
Love Me Some Rocks

I Became Distracted By Material Things

Cars



Video Games



It Began With Taking A Close Look At Rocks

I Followed That Up With Some Nice Interactions

I Started Appreciating How Useful Rock-Like Things Were

My Appreciation Only Grew & Grew

Until I Finally Fell In Love Again

I Was Brought On At LANL To….

- Describe The Lithology of the Entire Ocean Floor
- Use Data to Describe The Natural Radioisotopes
- Determine What Minerals May Be Neutron Activated

My Job Description Has Broadened Into

- Describe the lithology of the entire ocean floor
- Use researched data to describe the natural radioisotopes
- Determine what minerals may be neutron activated
- Research into Gamma radiation, Alpha and Beta Particles, and Neutron activation
- Describe the geology of New Mexico
- Determine what lithologies in NM are suitable for analysis, and will produce different results
- Analyze results from Gamma Ray analysis of various New Mexico geologies
- Utilize Monte Carlo Simulation to determine if in situ analysis is producing realistic results
- Utilize microsoft excel to determine if Monte Carlo Simulation is producing realistic results
- Determine if current technology has applications outside of current scope, including boreholes and oil wells
- Research the usage of the World's oceans as a nuclear dumping ground and create a map showing the locations, quantity of material dumped, and type of material dumped at each location
- Characterize the lithology present at those dump sites in detail, including possible REEs & LREEs
- Research the loss big money possibly due to be lost by the 1% to the 99% during the upcoming Sanders Presidency
- Determine if Underwater Martian Volcanoes are the cause of the Bermuda Triangle, or if it is truly Aliens!
- Provide an in depth analysis of the lithology and radioisotopes present near Toronto Canada
- Provide the lithologies of possible areas where Atlantis is believed to have sunk.
- Research the amount and content of fallout released during nuclear weapons testing
- Create a bibliography summarizing each resource found during research for each portion of my job
- And of course, Super Duper Top Secret Stuff

Why Do We Care?

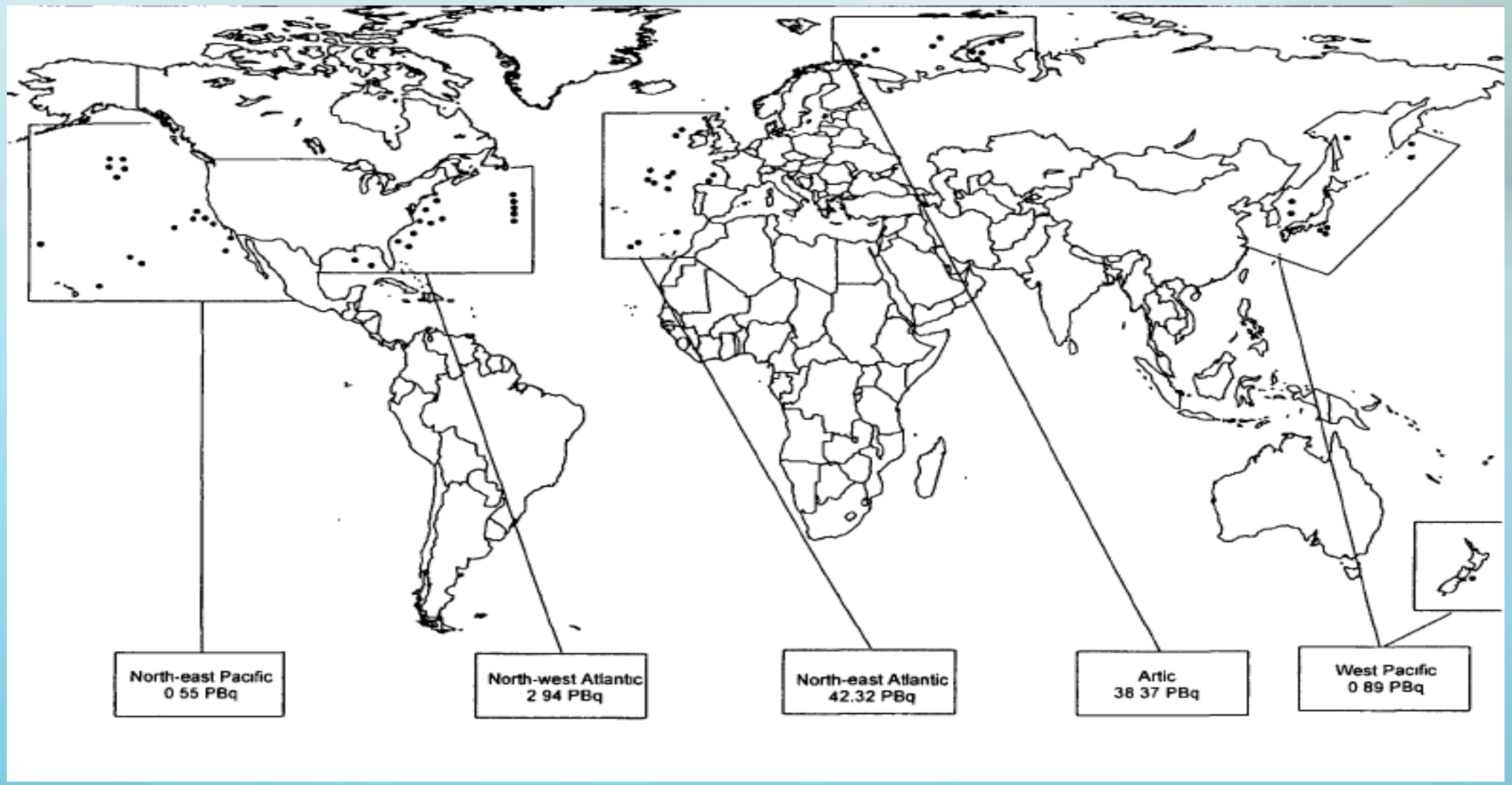
Garbage

Lab Coats

What Else

Sunken Submarines

Dump Site Locations



What & How

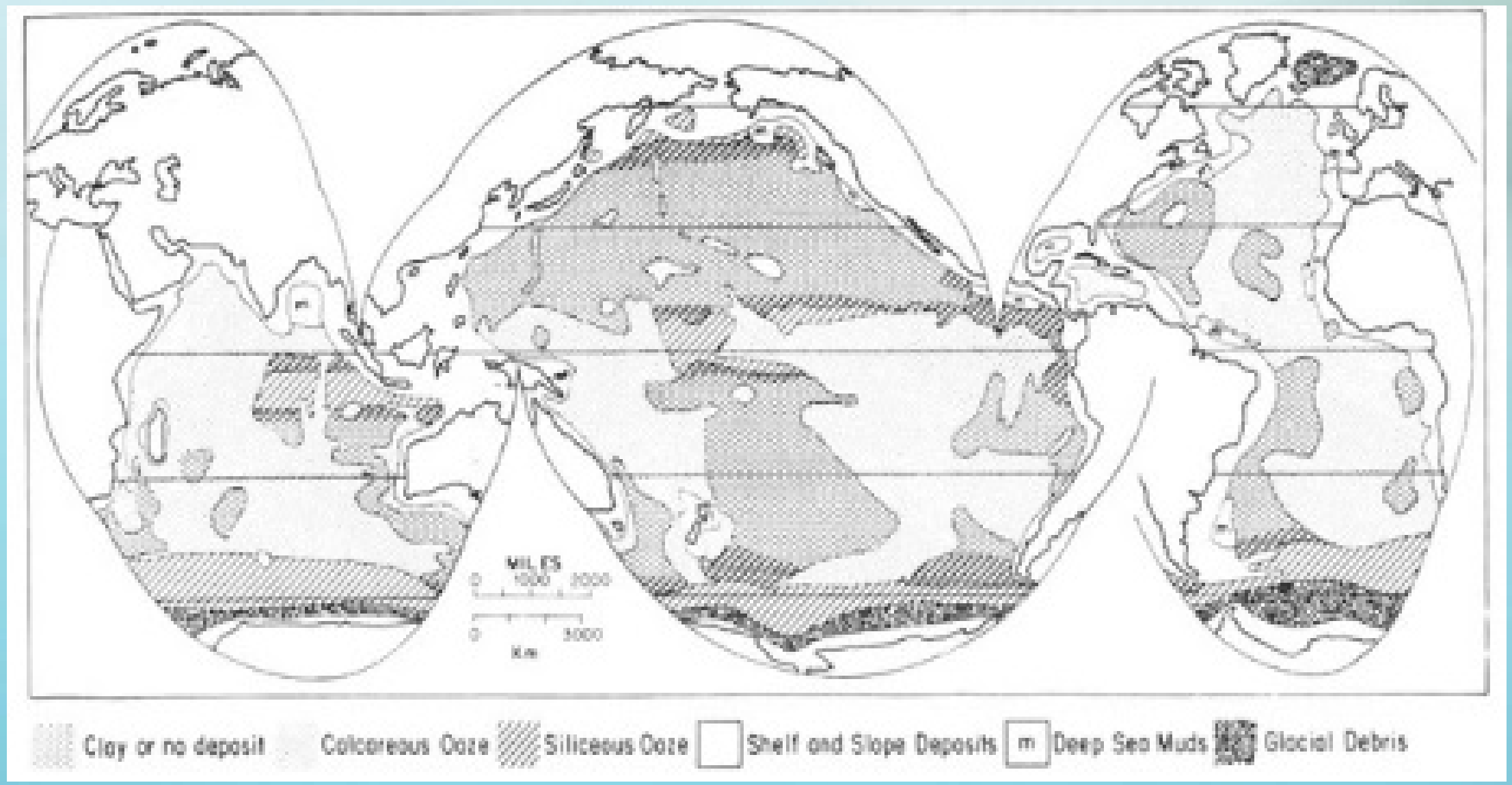
Or Something Far Worse

Research Begins – People Have Funny Ideas

As We Learn More

1970's – Not Just Disco

Still Too Much Disco



Think “My Cousin Vinny”

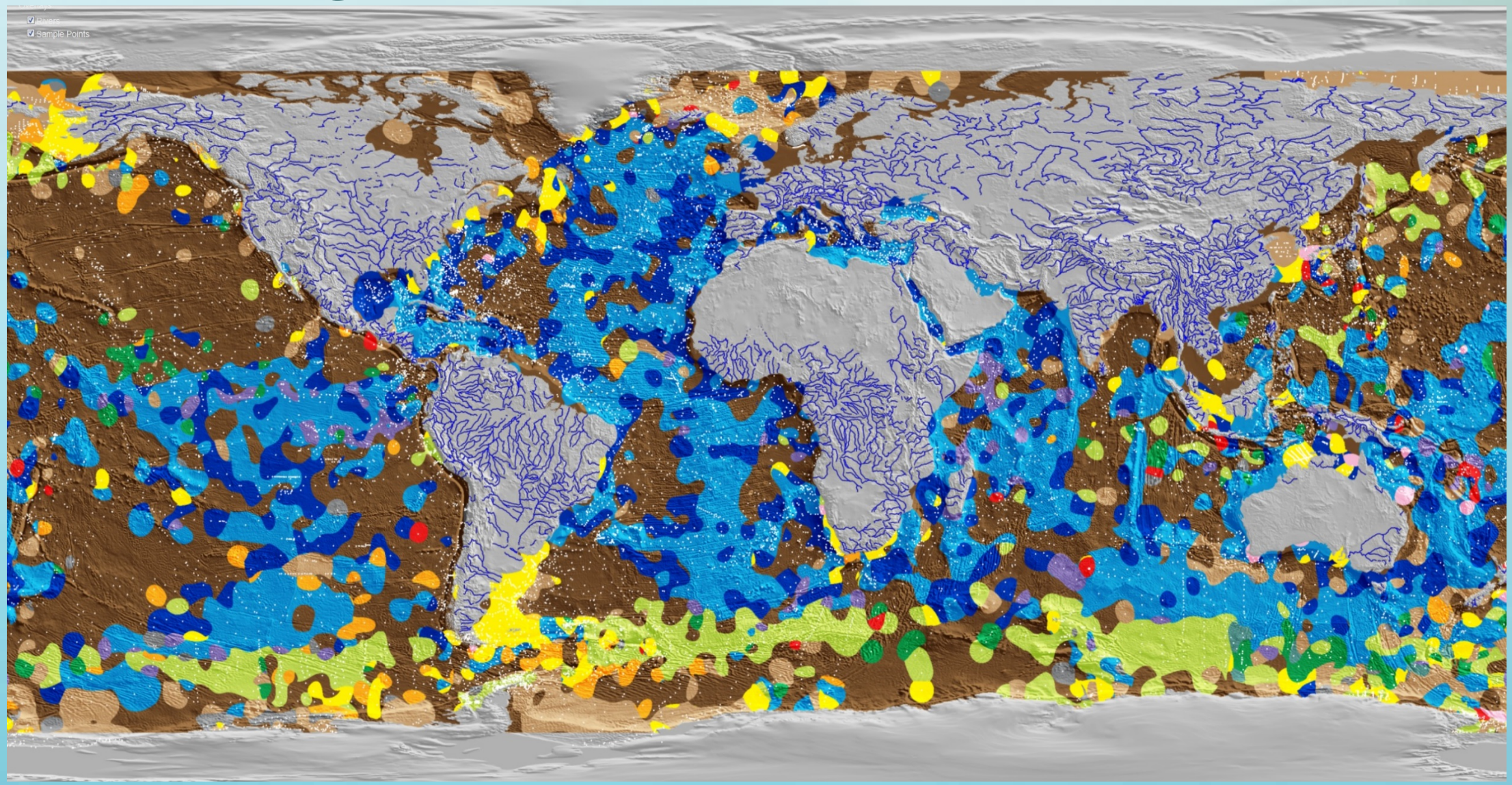
Lithogenous Sediment

- Formed by the weathering process and are made up of small particles of weathered rocks and oceanic volcanoes.
- Lots of Dust

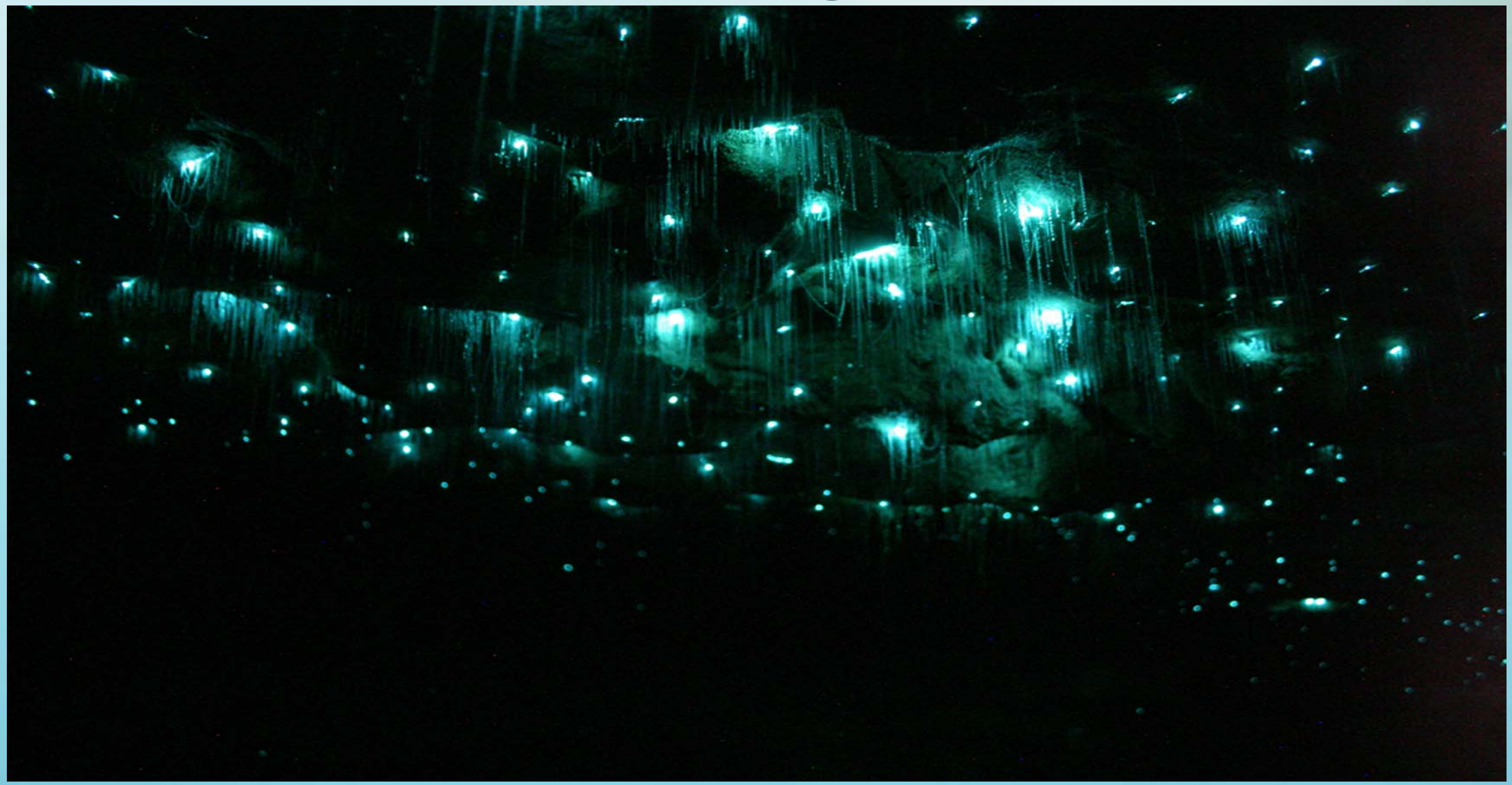
Pelagic Red Clay

- Containing less than 30% biogenic material, it consists of sediment that remains after the dissolution of both calcareous ($CaCO_3$) and siliceous (Si) biogenic particles while they settled through the water column.
- Also Lots of Dust

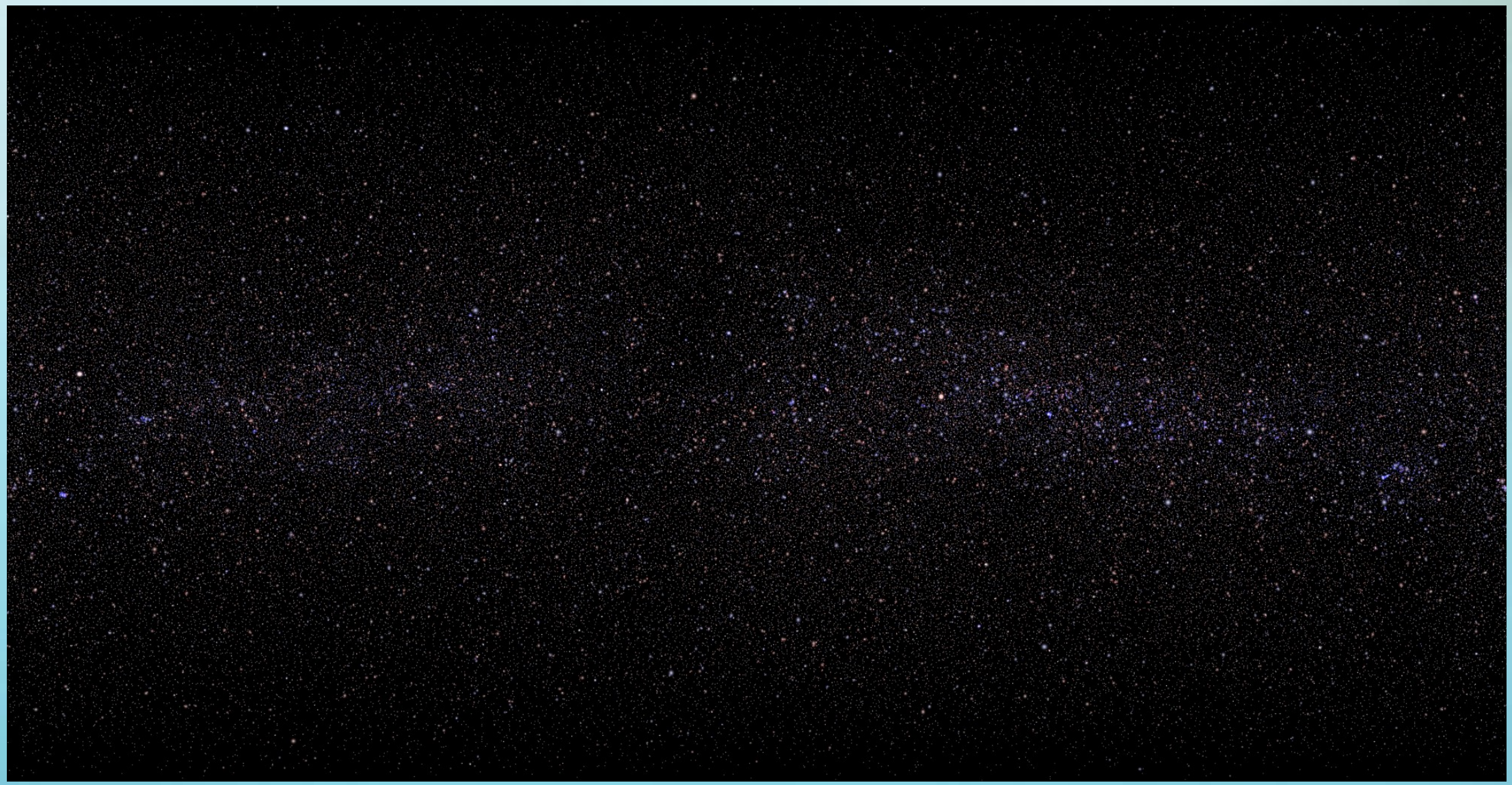
Big Data, Not Just For Facebook!



A Few Lights



A Few More



And Then There's Just Showing Off

Talk To The Hand

Staying Close To Home

A Short Drive

New Mexico Had An Ocean?

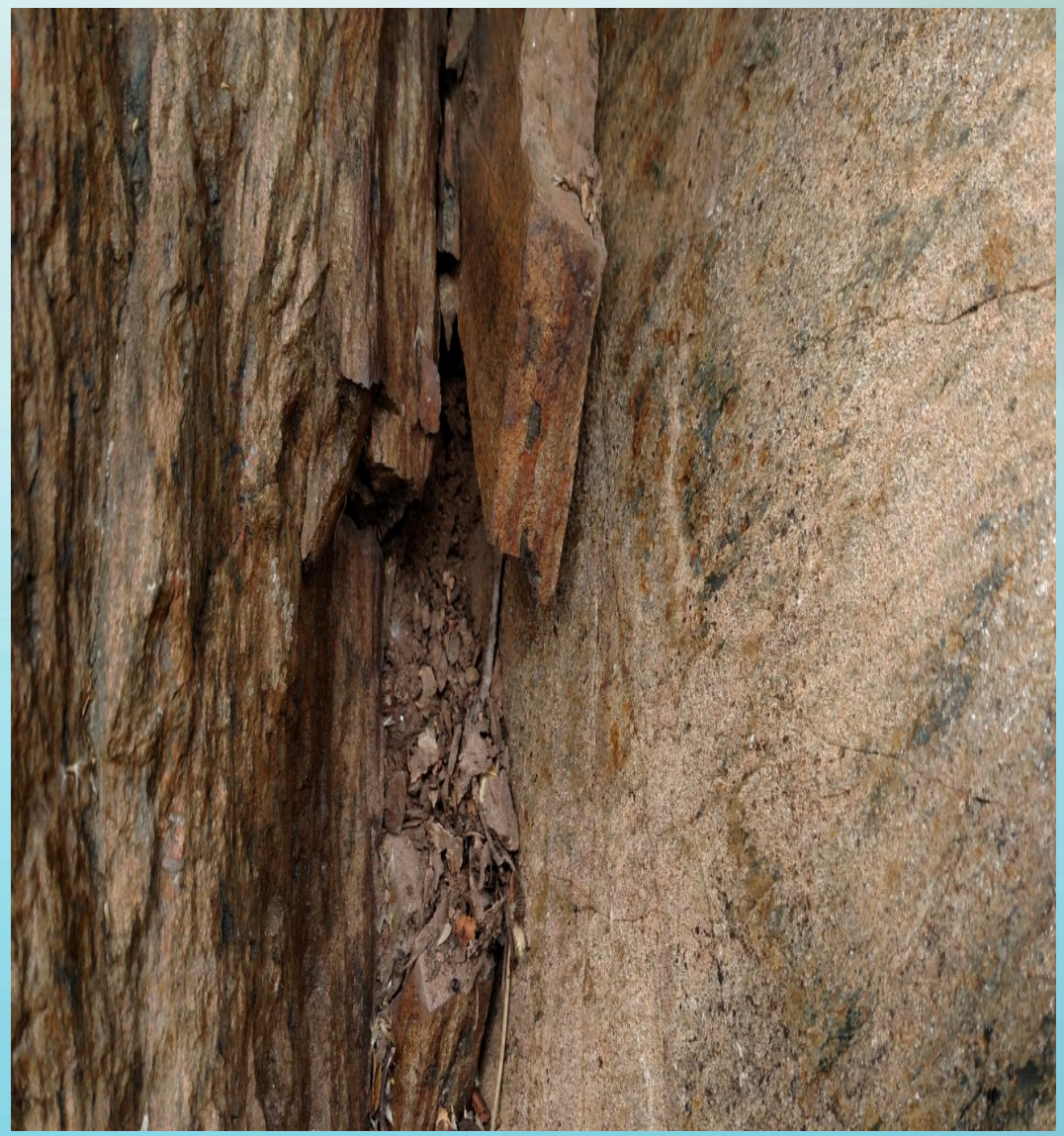
It Has Lakes?

It Does Have Lots of Mountains!

With Some Great Skiing

ROCKS! Of Different Types!

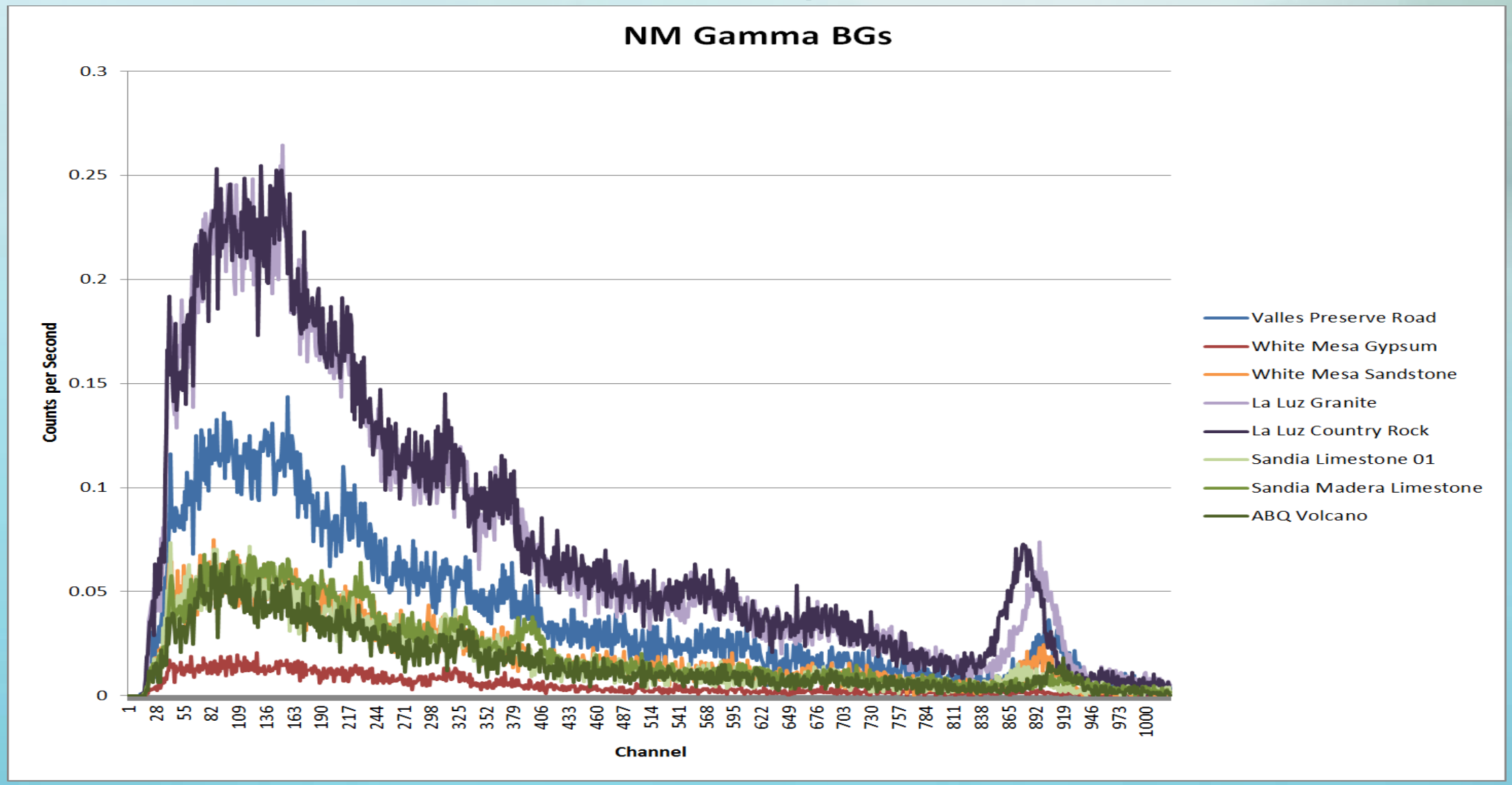
And More ROCKS!



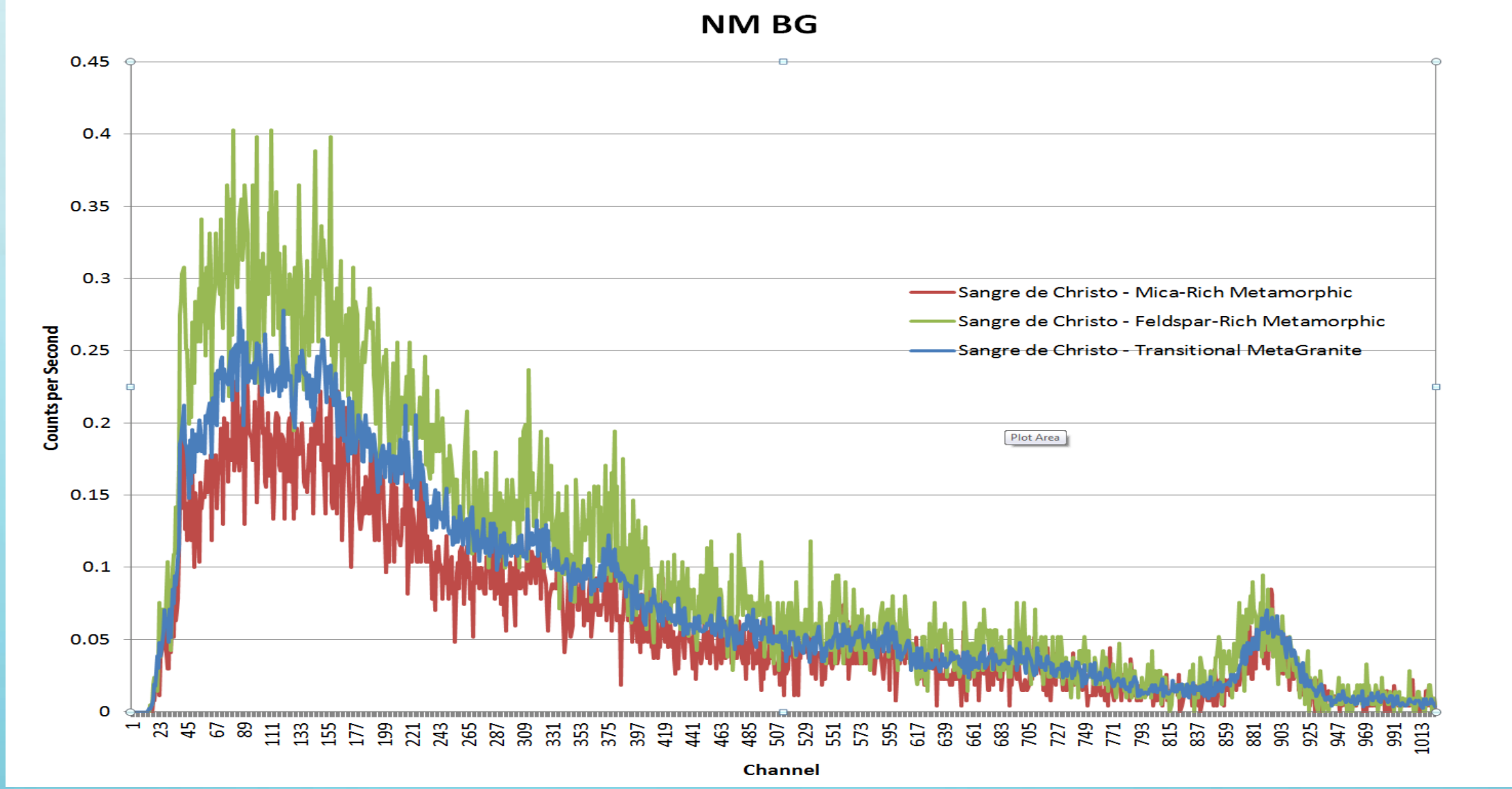
And Now My Wife Is Getting Angry

I’m Having Fun Though!

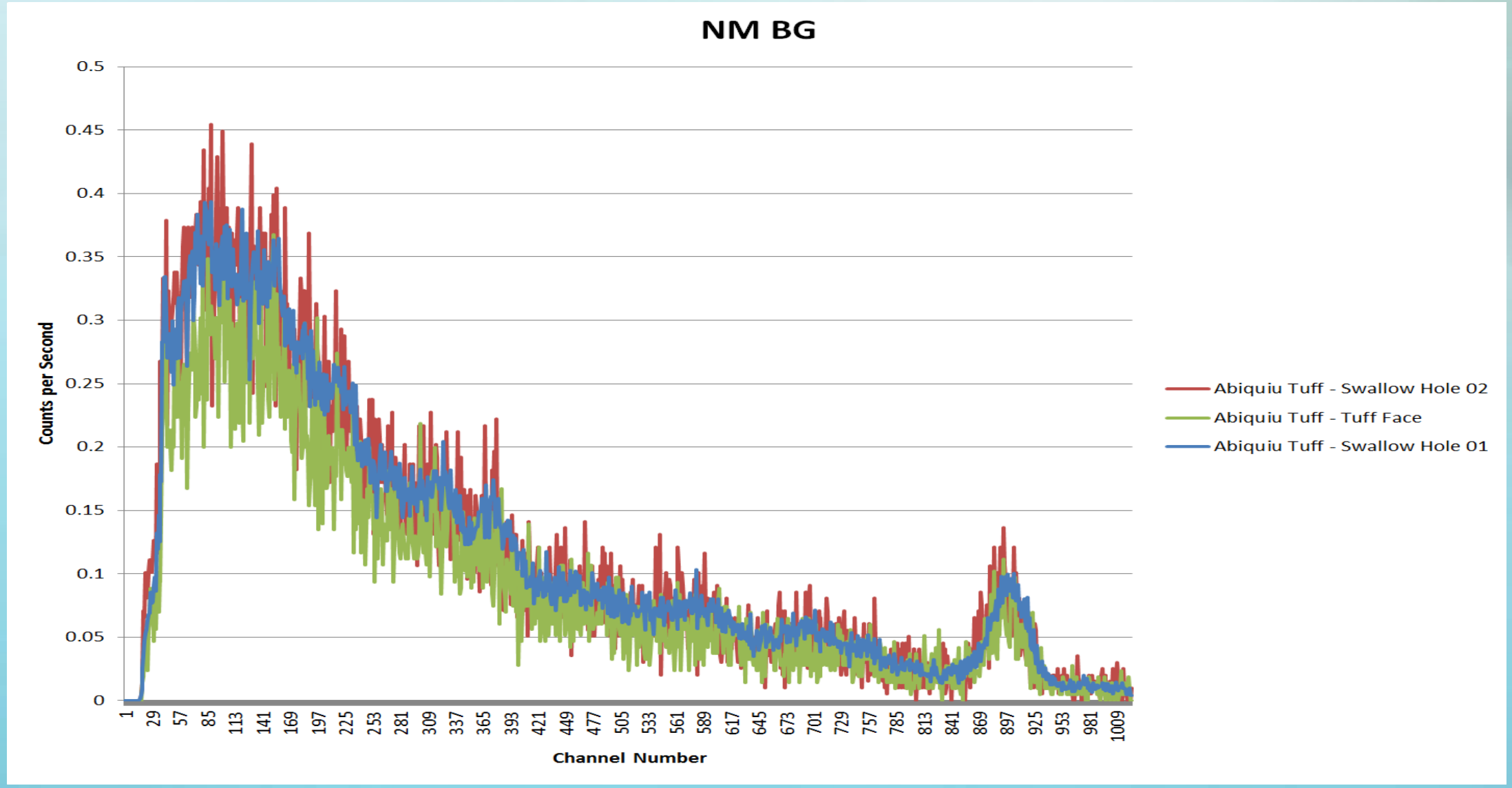
A Graph


NM Gamma BGs
Counts per Second
0.3
0.25
0.2
0.15
0.1
0.05
0
1
28
55
82
109
136
163
190
217
244
271
298
325
352
379
406
433
460
487
514
541
568
595
622
649
676
703
730
757
784
811
838
865
892
919
946
973
1000
Channel
Valles Preserve Road
White Mesa Gypsum
White Mesa Sandstone
La Luz Granite
La Luz Country Rock
Sandia Limestone 01
Sandia Madera Limestone
ABQ Volcano

Another


NM BG
Counts per Second
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
1
23
45
67
89
111
133
155
177
199
221
243
265
287
309
331
353
375
397
419
441
463
485
507
529
551
573
595
617
639
661
683
705
727
749
771
793
815
837
859
881
903
925
947
969
991
1013
Channel
Sangre de Christo - Mica-Rich Metamorphic
Sangre de Christo - Feldspar-Rich Metamorphic
Sangre de Christo - Transitional MetaGranite
Plot Area

One More


NM BG
Counts per Second
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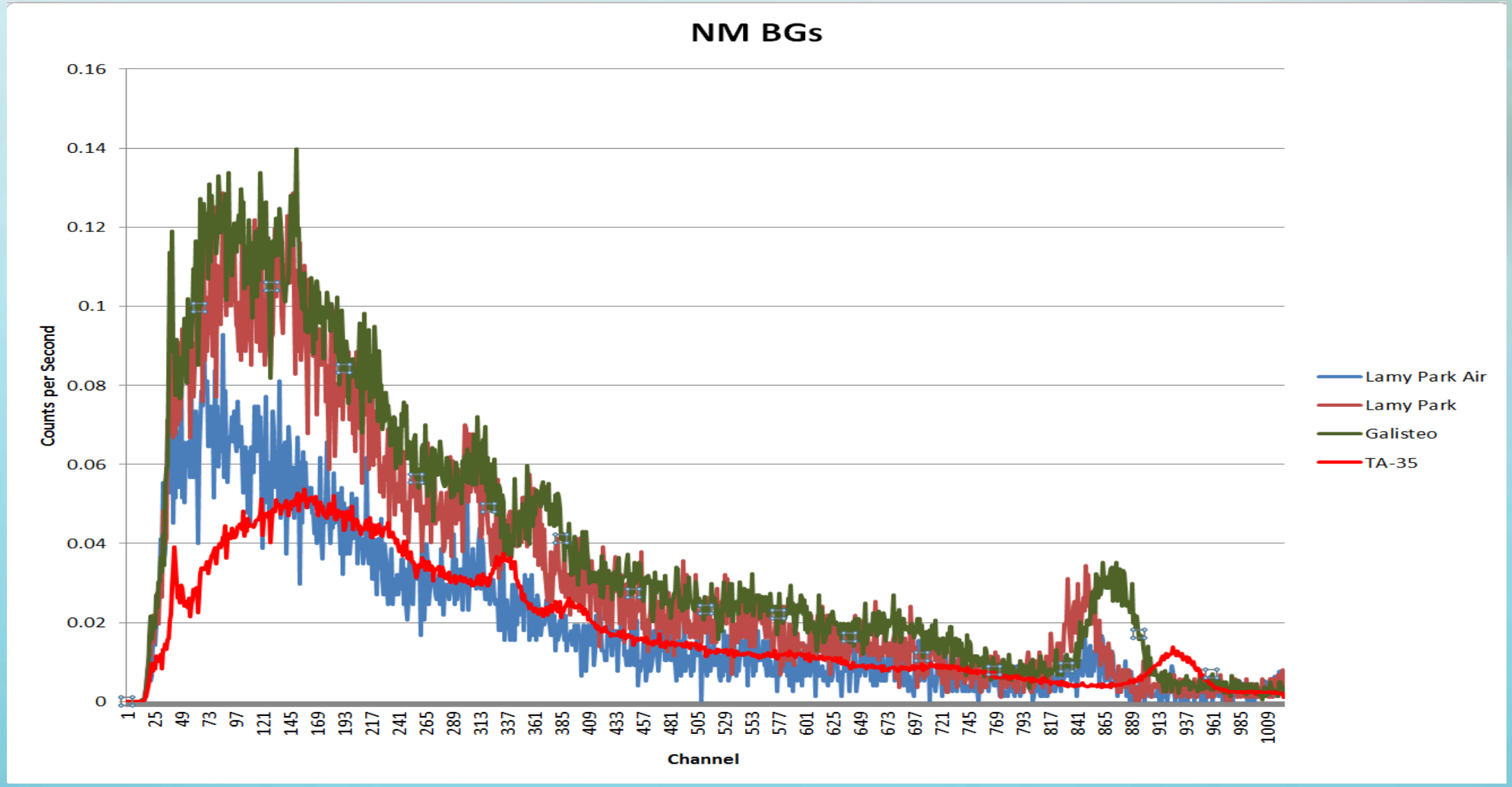
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
1
29
57
85
113
141
169
197
225
253
281
309
337
365
393
421
449
477
505
533
561
589
617
645
673
701
729
757
785
813
841
869
897
925
953
981
1009
Channel Number
Abiquiu Tuff - Swallow Hole 02
Abiquiu Tuff - Tuff Face
Abiquiu Tuff - Swallow Hole 01

Last One, I Promise



From Whence They Came

MCNP

MCNP is a general-purpose

Monte Carlo N-Particle Code

that can be used for neutron, photon, electron, or coupled neutron/photon/electron transport

Monte Carlo simulation performs risk analysis by building models of possible results by substituting a range of values—a **probability** distribution—for any factor that has inherent uncertainty. It then calculates results over and over, each time using a different set of random values from the **probability** functions.

Model Your Warp Core To Avoid……

This!

And More Importantly

Horrible Sequels!

But We Are A Little More Down To Earth…

Tuff

Granite

Or Ocean!

Geometry

A Cube

A Cylinder

A Rhombohedron?


Equality
OF THE
SEXES
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Where To Next