DRAFT Preliminary Fracture Map of the Bennington Area, Vermont

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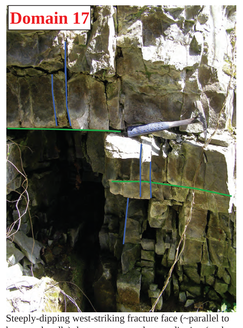
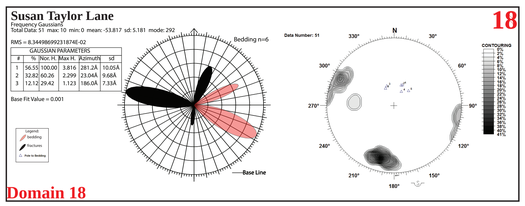
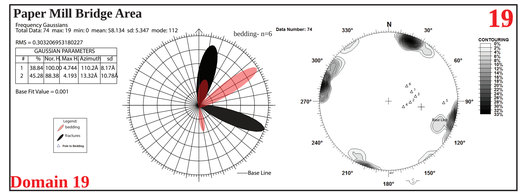
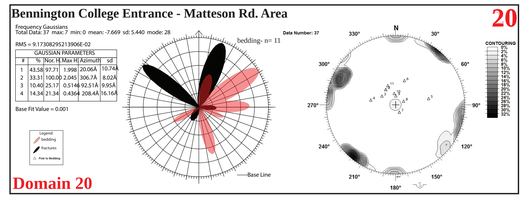


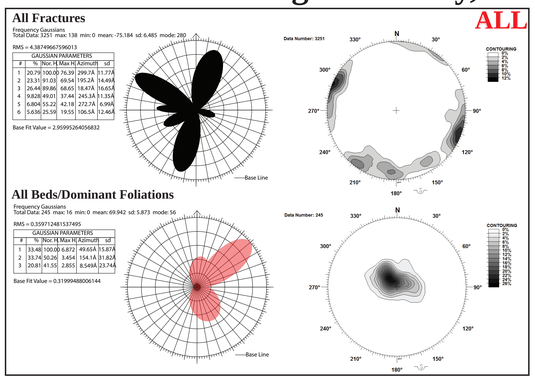
Steeply-dipping west-striking fracture face (~parallel to hammer handle) that exposes gently east-dipping (to the right) bedding (green) and steeply-dipping, closely-spaced, ~north-striking fractures (blue) in Clarendon Springs Formation. The clear plexiglass board lies on bedding (b).

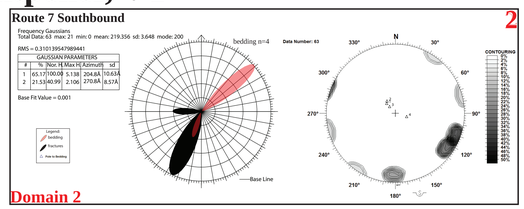
Orthogonal steeply-dipping NNE-(yellow notebook 1) and WNW-striking (yellow notebook 2) fractures in dolostones of the Clarendon Springs Formation. The clear plexiglass board lies on bedding (b).

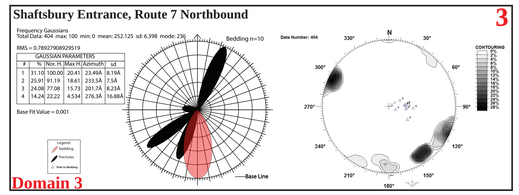


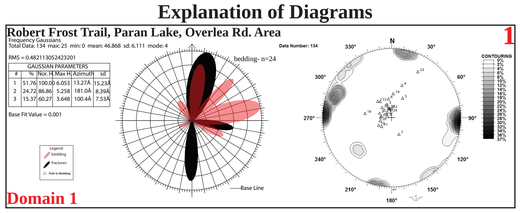






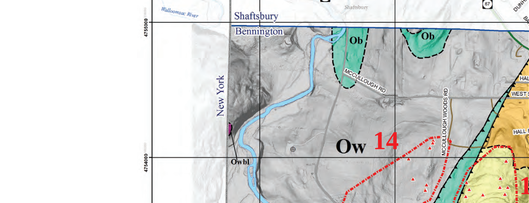


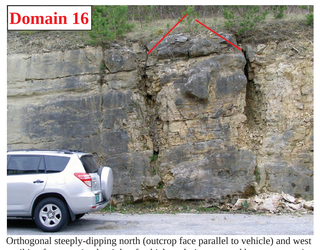




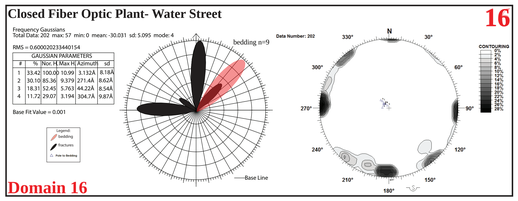
Explanation of Diagrams

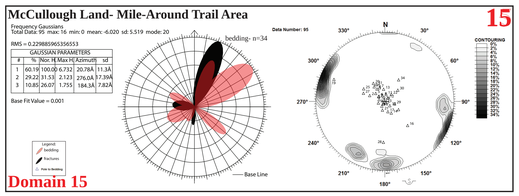
For each domain, fracture and bedding attitudes measured in the field are plotted in right-hand rule format on a frequency-azimuth rose diagram and an equal area stereonet using Daisy software (Salvini et al.,1999). Field stations (outcrops) within each domain are shown as red triangles. On the rose diagrams, the statistical peaks (with one standard deviation) for the strikes of fractures and bedding are plotted as black and transparent red "petals" respectively. On the equal area net, fractures are plotted as contoured poles to fracture planes (2% contour intervals), whereas bedding is plotted as individual poles to bedding planes. "All" bedding measurements for the full field area are plotted as contoured poles on the equal area net.

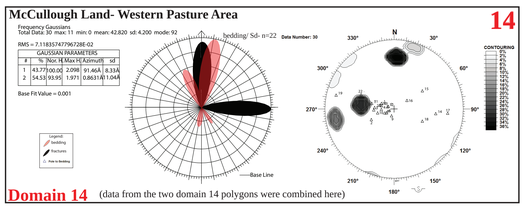




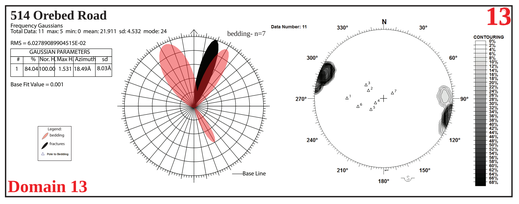
Orthogonal steeply-dipping north (outcrop face parallel to vehicle) and west-striking fractures (to the right of vehicle, solution-enarged by stormwater) red arrows).

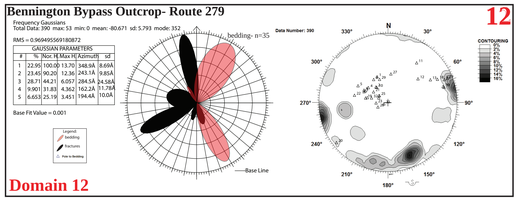


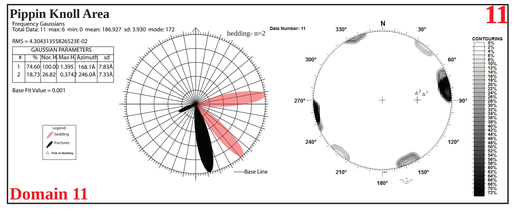


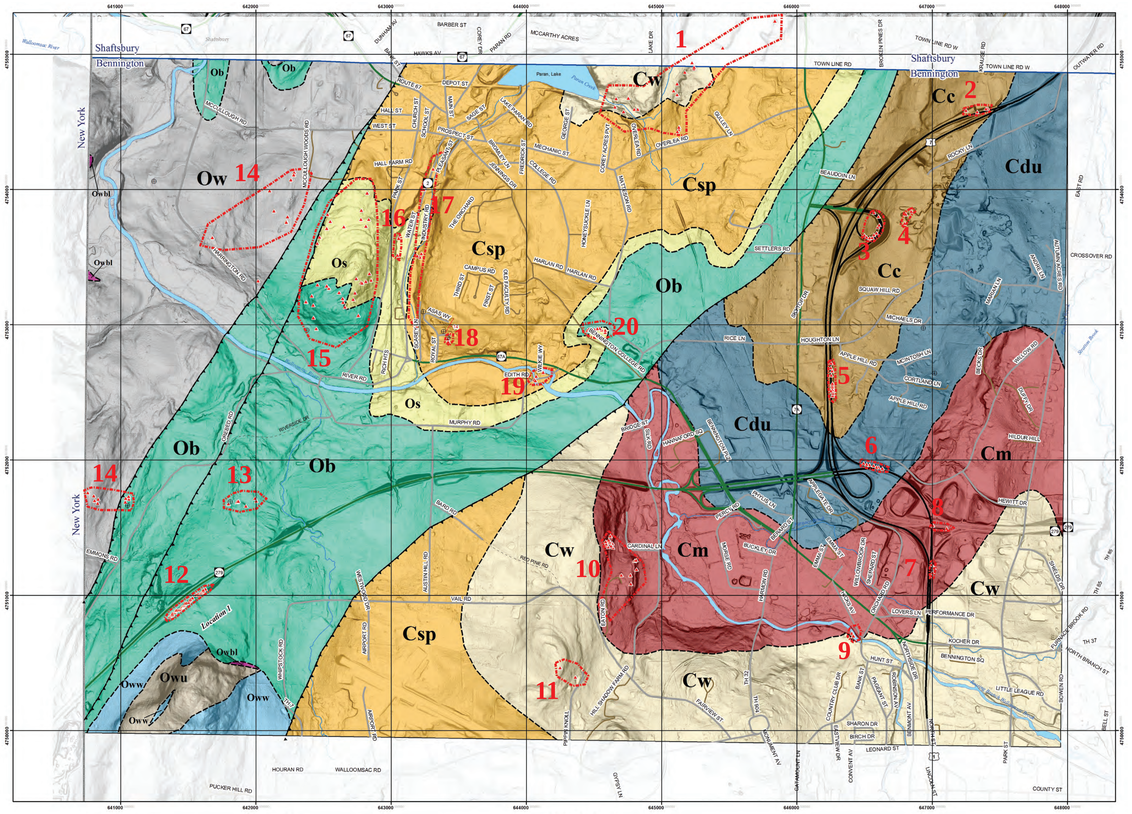


(data from the two domain 14 polygons were combined here)

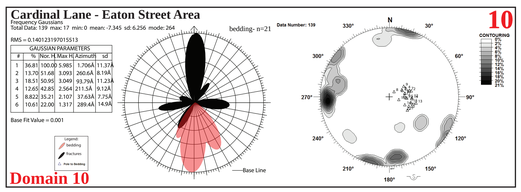


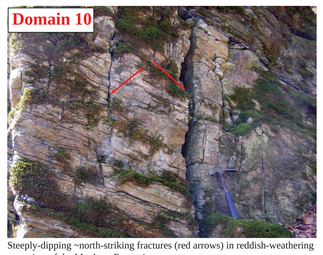




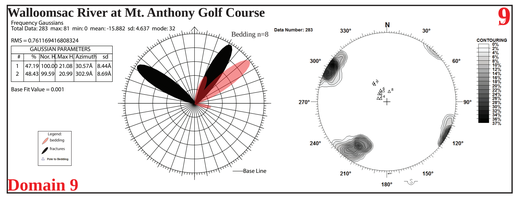


(modified from Kim, 2017a)





Steeply-dipping ~north-striking fractures (red arrows) in reddish-weathering quartzites of the Monkton Formation.



~Orthogonal steeply-dipping NE (yellow) and NW (blue) striking fractures in sandy dolostones (tan) and rusty-weathering phyllitic quartzites of the Monkton Formation.

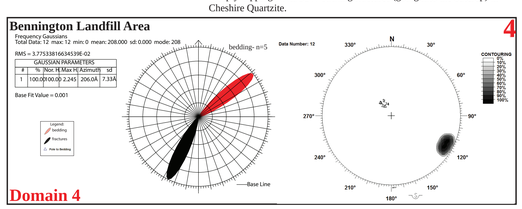
Steeply-dipping E-W (parallel to Colin's left hand) and SSW striking (parallel to his chest) fracture sets that intersect with bedding to form blocks in the Cheshire Quartzite.

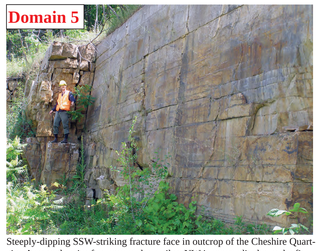
Steeply-dipping NNE/SSW-striking fractures (going into the outcrop) in Cheshire Quartzite.

References

Kim, J.J., 2017a, DRAFT Preliminary Bedrock Geology of the Bennington Area, Vermont: Plate 1- Preliminary Bedrock Geologic Map of the Bennington Area, Vermont Geological Survey Open File Report VG17-4A, scale 1:12,000.

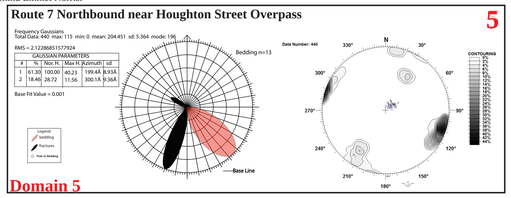
Salvini, F., Billi, A. Wise, D., 1999, Strike-Slip Fault-Propagation Cleavage in Carbonate Rocks: the Mattinata Fault Zone, Southern Appenines, Italy: Journal of Structural Geology, v. 21, p. 1731-1749.

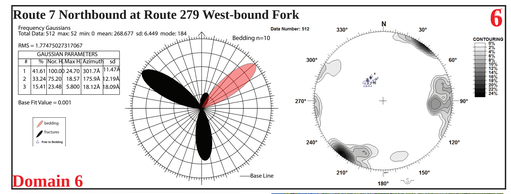




Steeply-dipping SSW-striking fracture face in outcrop of the Cheshire Quartzite. A second major fracture set that strikes NW is perpendicular to the first set and is visible in the rock face behind Emmet Norris.

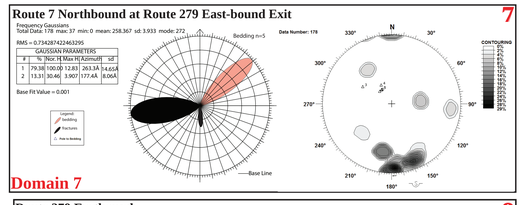
Steeply-dipping SSW-striking fractures (parallel to the hammer) in pavement outcrop of the Cheshire Quartzite.

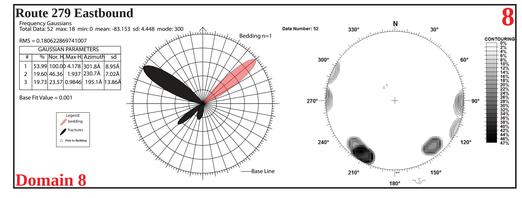




Steeply-dipping NW-striking fractures (lower right toward upper left in photo) in calcareous quartzites of the Dunham Formation

Steeply-dipping WSW-striking fractures (~parallel to the back of the orange vest) in tan dolostones of the Monkton Formation.





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