

Late Silurian-Early Devonian -----> Early Devonian - Middle Devonian -----> Cretaceous (?)

Planar Structures

Bedding

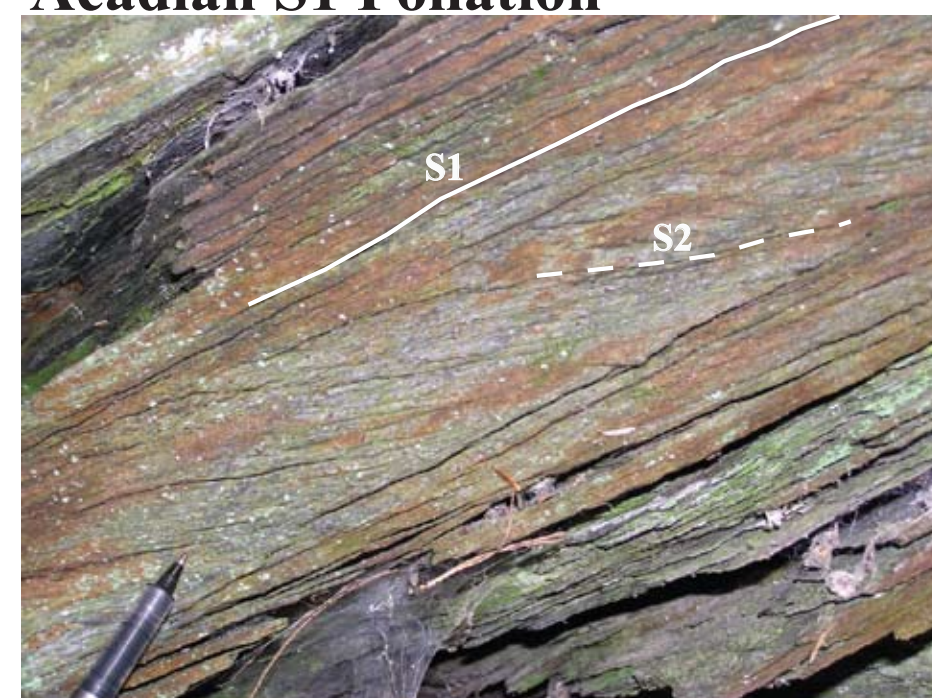


Beds of marble and phyllite in the Waits River Formation.



Beds of quartzite and phyllite in the Gile Mountain Formation.

Acadian S1 Foliation



The dominant S1 foliation in gray phyllites of the Waits River Formation. S2 is at a low angle to S1.

Acadian S2 Foliation



S2 crenulation cleavage in gray phyllites of the Waits River Formation.



S1 foliation (sub-vertical) and S2 crenulation cleavage (sub-horizontal) in gray phyllites of the Waits River Formation.

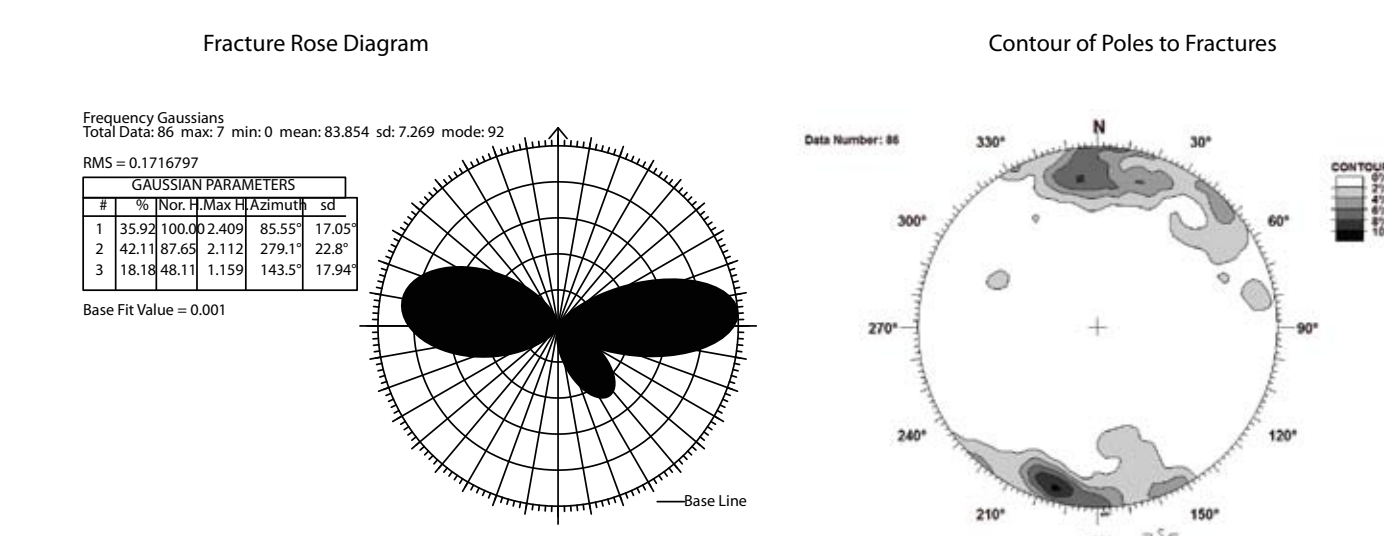
Fractures



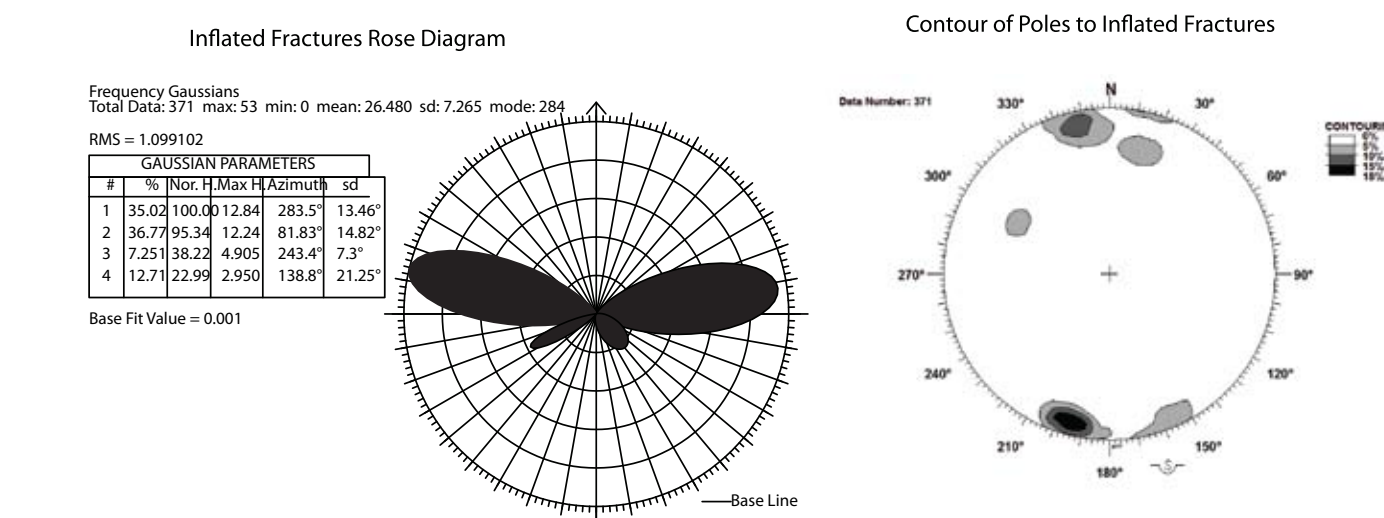
East-west trending steeply south dipping fractures in calcareous quartzite of the Waits River Formation. Fractures that formed perpendicular to S1/bedding are the most common type in the Plainfield Quadrangle. See rose diagrams and equal area nets below.



East-west trending steeply south dipping fractures in phyllites of the Waits River Formation.



Frequency-azimuth rose diagrams (left) and contoured equal area nets (right) of fractures in the Plainfield Quadrangle accounting for only one fracture of each azimuth at each outcrop/field station (Salvini et al., 1999).



Frequency-azimuth rose diagrams (left) and contoured equal area nets (right) of fractures in the Plainfield Quadrangle accounting for all fractures of each azimuth at each outcrop/field station (Salvini et al., 1999). The dominant fracture azimuth is clearly E-W. Note the subordinate southeast and southwest trending fracture sets.

Folds

Acadian F1 Folds

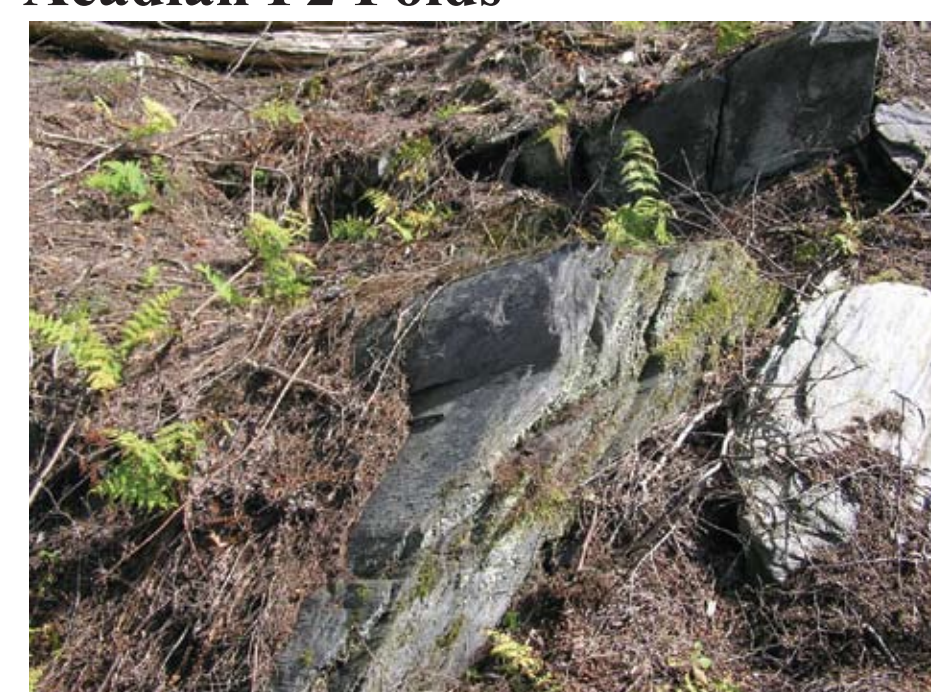


Reclined isoclinal F1 fold in phyllitic quartzite of Gile Mountain Formation.



Reclined isoclinal F1 folds within calcareous quartzite bed of the Waits River Formation.

Acadian F2 Folds



Asymmetric open F2 folds that deform S1 in phyllites of the Waits River Formation.



Closeup of F2 folds and the associated crenulation lineation (L2) in phyllites of the Waits River Formation. These folds deform S1 and plunge gently to the north (right) throughout the Plainfield Quadrangle.

Acadian F3 Folds



Open fold (F3) that deforms S1 and S2 in phyllites of the Waits River Formation.

Lineations

Acadian L1 Lineation



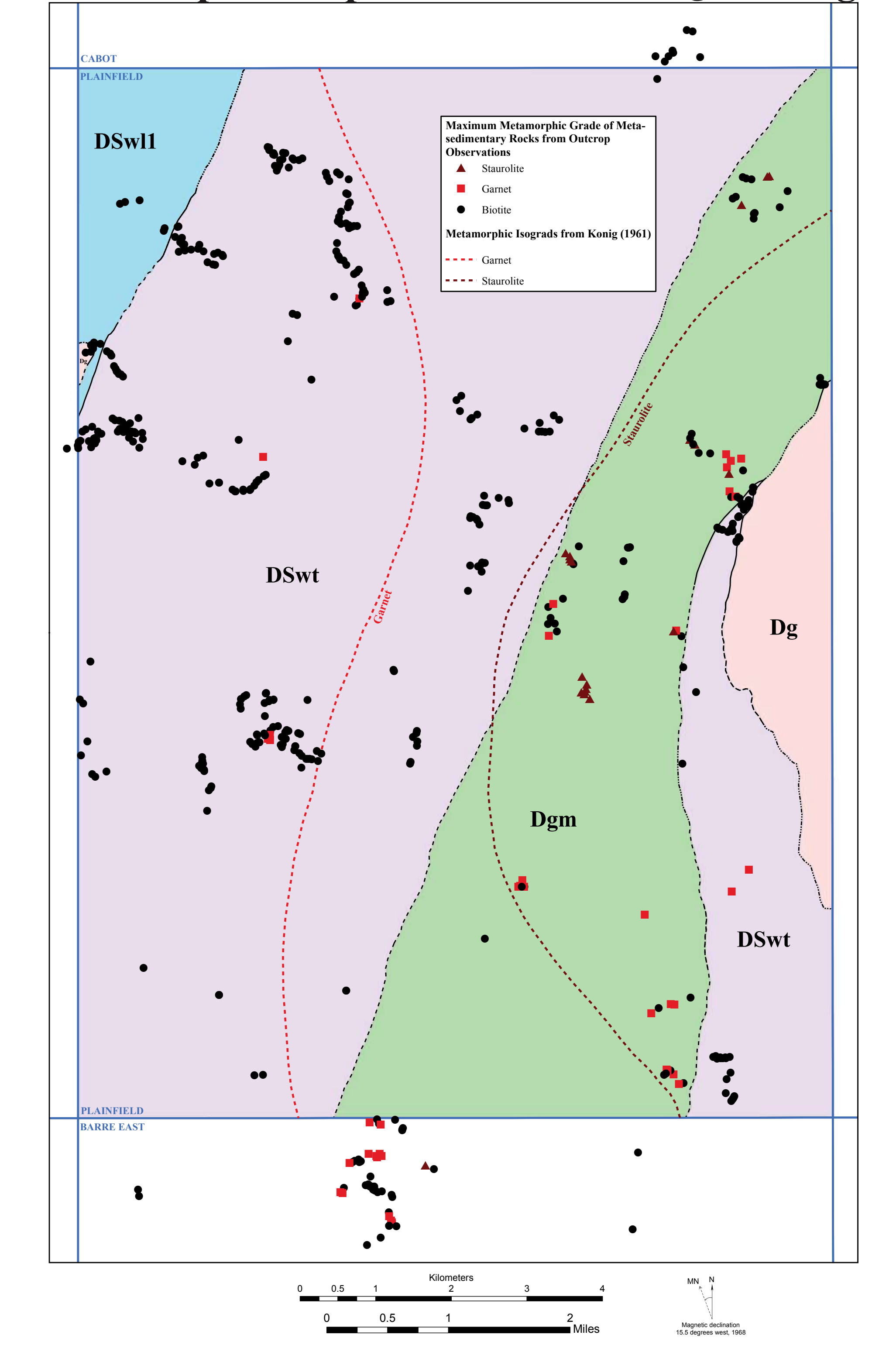
Steeply-plunging intersection lineation (L1) of S1 on bedding in phyllites of the Gile Mountain Formation.

Acadian L2 Lineation



Gently-plunging crenulation lineations (L2) on S1 of phyllites in the Waits River Formation. Garnets have asymmetric tails that suggest they were deformed by this crenulate cleavage.

Metamorphic Map of the Plainfield Quadrangle



References:

König, R.H., 1961, Geology of the Plainfield Quadrangle, Vermont: Vermont Geological Survey Bulletin #16, 86 p., 2 plates, scale 1:62,500.

Salvini F., Billi, A., Wise, D.U., 1999, Strike-slip fault-propagation cleavage in carbonate rocks: the Mattinata fault zone, Southern Apennines, Italy: Journal of Structural Geology, vol. 21, pp. 1731-1749 ISSN: 0191-8141.