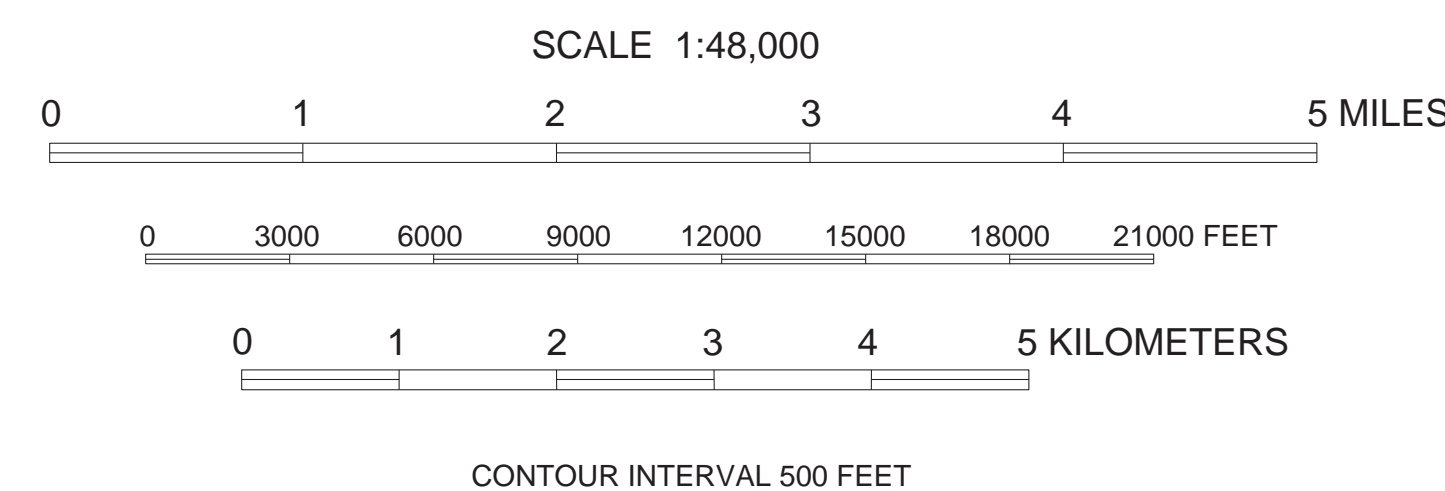
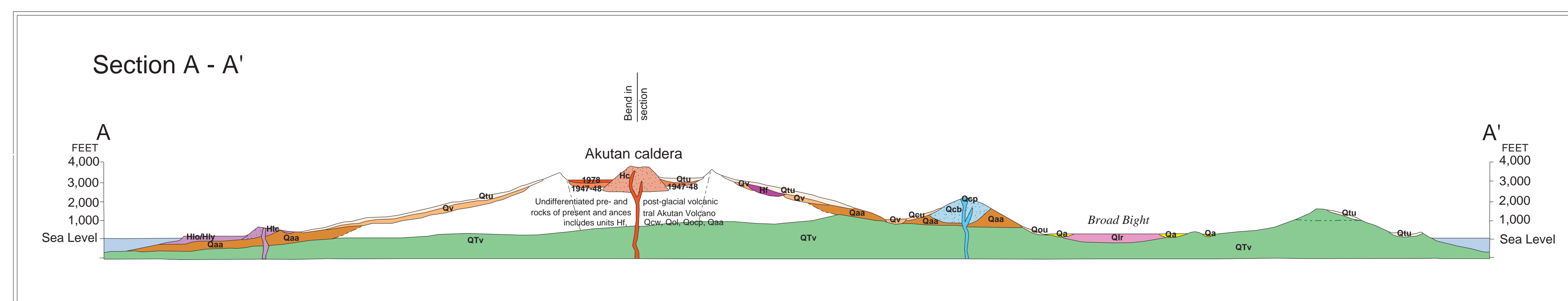
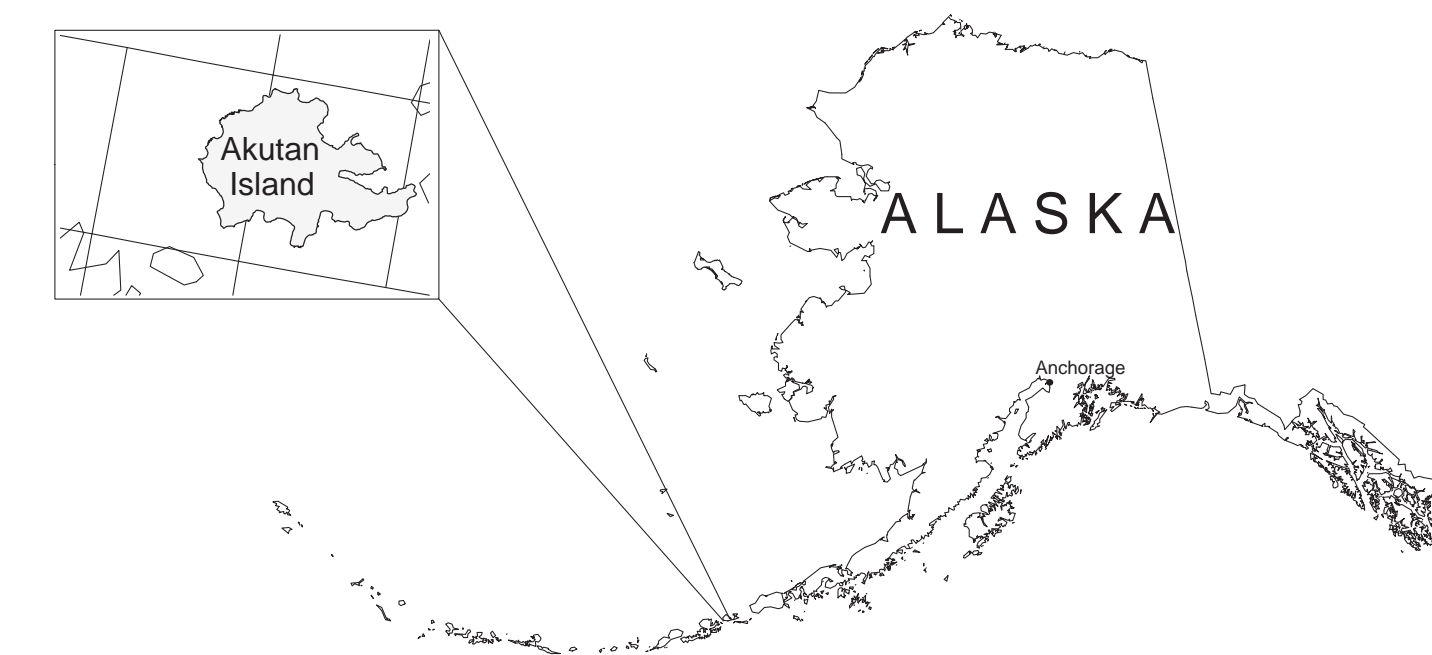


Base from U.S. Geological Survey Unalaska D-1, Unimak A-5 and A-6, Alaska, 1:63,360, 1989

Geology by D.H. Richter, C.F. Waythomas, R.G. McGimsey, and P.L. Stelling, 1998

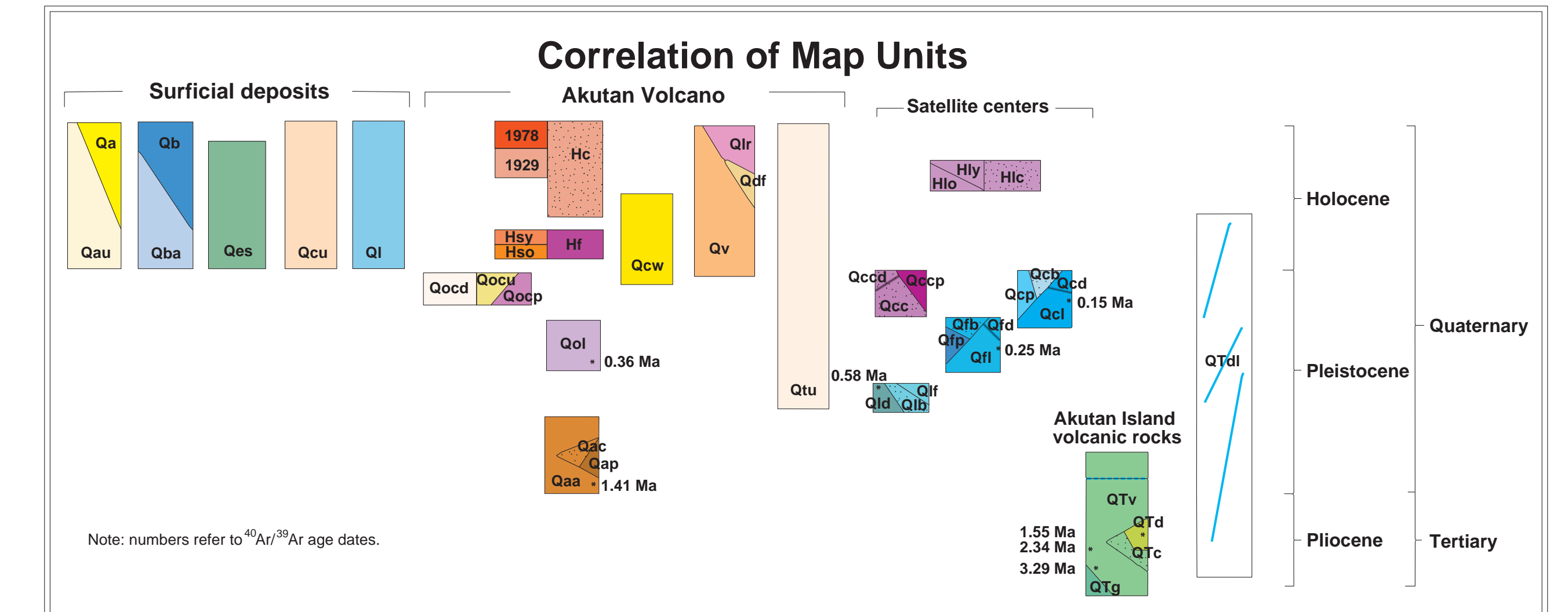


1989 Magnetic north
declination - 15° east



GEOLOGY OF AKUTAN ISLAND, ALASKA

By
Donald H. Richter, Christopher F. Waythomas, Robert G. McGimsey, and Peter L. Stelling
Alaska Volcano Observatory
1998



Note: numbers refer to ⁴⁰Ar/³⁹Ar age dates.

Description of Map Units

(See accompanying pamphlet for more detailed descriptions of map units)

| SURFICIAL DEPOSITS | |
|--|-------------------------------------|
| Qa Alluvium in active stream channels | Qes Eolian deposits |
| Qau Alluvium, undifferentiated | Qb Modern beach deposits |
| Qcu Colluvium, undifferentiated | Qba Abandoned beach deposits |
| Ql Lacustrine deposits | |

| DEPOSITS OF AKUTAN AND ANCESTRAL AKUTAN VOLCANO | |
|--|--|
| 1978 1978 lava flow | Qtu Tephra |
| 1947-48 1949-48 lava flow (shown in cross section only) | Qcw Present caldera wall rocks |
| 1929 1929 lava flow | Qocp Older caldera (?) plug |
| Hc Modern cinder cone | Qocd Older caldera (?) dome |
| Hsy Younger Sea Lion Rocks lava flow | Qocu Older caldera wall rocks, undifferentiated |
| Hso Older Sea Lion Rocks lava flow | Qol Pre-glacial lava flows |
| Hf Holocene lava flows | Qaa Ancestral Akutan volcanic rocks, undifferentiated |
| Qv Volcaniclastic deposits | Qac Ancestral Akutan cinder cone |
| Qlr Lahar runout deposits | Qap Ancestral Akutan plug |
| Qdf Reworked lahar deposits | |

| SATELLITE ERUPTIVE CENTERS | |
|---|---------------------------------------|
| Hly Younger Lava Point lava flow | Qcd Cascade Bight dikes |
| Hlo Older Lava Point lava flow | Qcb Cascade Bight vent breccia |
| Hlc Lava Point cinder cone | Qcp Cascade Bight plugs |
| Qlf Long valley lava flow | Qcl Cascade Bight lava flow |
| Qld Long valley dome (?) complex | Qcc Cinder cone |
| Qlb Long valley breccia | Qccp Plug |
| Qrd Flat Top dikes | Qccd Dike |
| Qfb Flat Top vent breccia | |
| Qfp Flat Top plugs | |
| Qfl Flat Top lava flows | |

| AKUTAN ISLAND VOLCANIC AND INTRUSIVE ROCKS | |
|--|---|
| QTg Gabbro | QTV Volcanic rocks, undifferentiated |
| QTD Domes | QTdi Dikes, undifferentiated |
| QTC Cinder cones | |

Explanation of Symbols

| | |
|---------------------------------------|---|
| | CONTACT -- Known, approximate, or inferred |
| | CONTACT -- Approximate contact between subaerial volcanic rocks and subaqueous volcanic rocks in unit QTv. |
| | FAULT -- Dashed where inferred, dotted where concealed, heavy where reactivated during (?) March 1996 seismic crisis. U, upthrown side; D, downthrown side. |
| | GROUND CRACKS -- Linear zone of intense ground breakage that occurred during (?) March 1996 seismic crisis. |
| | CALDERA WALL -- Dotted where concealed. Hachures on caldera side. |
| | OLD CALDERA WALL -- Dotted where concealed. Hachures on caldera side. |
| ATTITUDE OF BEDDING AND FLOW LAYERING | |
| | Inclined (measured) |
| | Inclined (estimated) |
| | Horizontal |
| | FUMAROLE AREA -- In colluvium (Qcu) at elevation of 1000 - 1400 feet in upper Hot Springs valley. |
| | HOT SPRING AREA -- In alluvium (Qau) in mid-to-lower Hot Springs valley. |
| | PETROGRAPHIC SAMPLE LOCALITY -- Number indicates sample has been chemically analyzed (Table 1); letter indicates sample has been radiometrically dated (Table 3). |
| | RADIOCARBON SAMPLE LOCALITY -- Number refers to sample data in table 2. |