



- Maximum range of valid variable parameters
- Most recent data

This concludes the preprocessing of satellite data. The resulting data set is free of erroneous message data and invalid doppler counts.

Further quality control of satellite fixes is handled as an editing function. Inasmuch as satellite doppler and, more especially, the refraction count are known to degrade when the satellite is near the horizon, doppler counts received below  $7.5^{\circ}$  are rejected.

Another quality control tool available to GeoNav operators is a constant which specifies the minimum number of short doppler intervals on both sides of the satellite's closest approach which the software (GNSDOP) will demand before computing a fix. This constant insures symmetry of the data (same number of short doppler counts on each side of closest approach) and is an indirect control of the minimum satellite elevation angle acceptable to the system. If, after checking the aforementioned editing criteria the system determines that there is the required symmetry but not enough data above  $7.5^{\circ}$  (at least 10 short doppler intervals), the editing software will accept just enough short doppler segments below  $7.5^{\circ}$  (maintaining symmetry) to meet minimum requirements.

Additional control permits rejection of an entire satellite observation if any portion of the data was collected while the observation angle exceeded some angle selected by the operator. This angle is typically  $70^{\circ}$  to  $75^{\circ}$  and is adjusted according to satellite alerts for the area of operation.

The preceding paragraphs describe some major elements of editing included in the GeoNav satellite software package. Together, all of these insure a high degree of quality for the data entering into a satellite-fix