**🛠️ 3. Data Collection and Processing**

**✅ Step-by-step outline:**

1. **Log $GPGSV data continuously (preferably at 1 Hz or higher)**
2. **Extract SNR values for each satellite and each epoch**
3. **Filter data by elevation angle (e.g., only use satellites >15° elevation to reduce multipath)**
4. **Compute metrics like:**
   * **Mean SNR over time**
   * **Standard deviation or variance of SNR**
   * **Rate of change of SNR (to detect scintillation events)**
5. **Visualize SNR vs time, satellite elevation, or azimuth**
6. **Compare SNR patterns with known ionospheric events (e.g., using Kp index, solar activity, or TEC maps)**

**A screenshot of a computer

AI-generated content may be incorrect.**

**🔍 5. Indicators of Ionospheric Activity in SNR**

| **Indicator** | **Meaning** |
| --- | --- |
| Sudden drop in SNR | Potential scintillation |
| Increased SNR variance | Irregular ionospheric structure |
| Consistent low SNR across satellites | Widespread disturbance or poor sky view |
| Diurnal or seasonal trends | Normal ionospheric behavior |