It is well accepted that worst scintillation cases are expected to occur at low latitude regions close the nighttime Equatorial Anomaly (EA) peak. L Band scintillation is caused by intermediate-scale size (100-1000m) irregularities that usually are found to be embedded on large-scale (10's of km) plasma depletions, also referred as ionospheric plasma bubbles. During high solar activity years plasma bubbles develop more frequently at the magnetic equator, rise till high altitudes and reach low latitudes through the magnetic field lines. Since 1997, INPE has operated a Global Positioning System (GPS)-based scintillation monitor developed by Cornell University in São José dos Campos - SJC (23^{o} S, 45^{o}W, -18.07^{o} dip latitude) to investigate characteristics of intermediate-scale irregularities occurrence and determine characteristics of the scintillation magnitude in the EA peak region. Besides SJC, GPS scintillation observations have also been carried out at several other observation sites in Brazil in such way that combination of collected data can give information about the temporal and spatial characteristics of irregularities/scintillations occurrence over the Brazilian region. In this work we present first analysis results of 5 years of scintillation observations at SJC. Data analysis shows the seasonal variation (September to April) of the intermediate-scale irregularities for the Brazilian region, occurrence frequency versus local time for different solar flux conditions and the solar flux effect over the magnitude of scintillations. During the 1997/1998 period (F10.7 = 99) the 5% average occurrence frequency started at about 20:30 LT and lasted till about 01:00 LT. However, during higher solar activity years the 5% average occurrence frequency started at about 19:30 LT and lasted till about 02:00 LT. The maximum average occurrence frequency reached 17% during the 1997/1998 period and 68% during the 2000/2001 period. Stronger scintillations were observed during higher solar activity years and equinoctial months (September/October and March/April) and higher occurrence frequency was observed during November, December and January months. Combination of data collected by several GPS scintillation monitors make possible to construct scintillation (based on the S_4 scintillation index) maps for Brazil that indicate regions where stronger scintillations are observed. Results can be used as input parameters in empirical or semi-empirical models for scintillation and/or ionospheric irregularity occurrence and also as reference for implementation of GPS Augmentation Systems in the Caribbean-South American region.