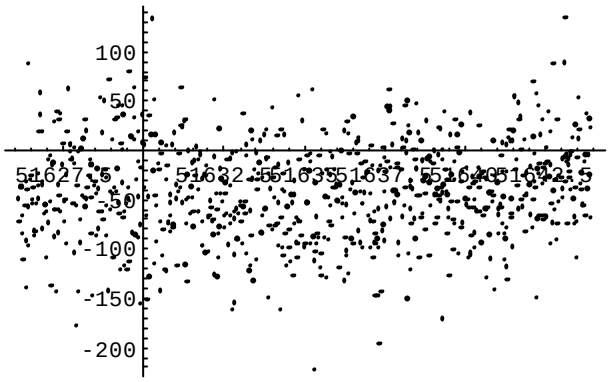
■ Processing APMP_Cal data from Kriss Korea

```
In[1]:= Off[General::spell1];

In[2]:= dataPath = "g:\\APMP_Cal\\";
```

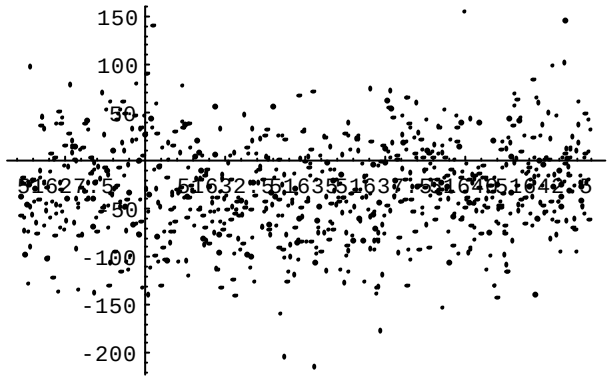
■ Definitions

```
In[25]:= dataHost = ReadCCTF["host.kriss.dat"];
         (*Host reported values:*)
         RepHostIntDly = 50;
           RepHostRefDly = 576;
          RepHostAntDly = 250;
         RepHostDly = RepHostIntDly + RepHostAntDly - RepHostRefDly;

         (*Host Receiver internal settings:*)
         RxHostIntDly = 50;
           RxHostRefDly = 576;
          RxHostAntDly = 250;
         RxHostDly = RxHostIntDly + RxHostAntDly - RxHostRefDly;
         HostCorrection = RepHostDly - RxHostDly;

         dataTrav = ReadCCTF["trav.kriss.dat"];
         (*Host reported values:*)
         RepTravIntDly = 68;
           RepTravRefDly = 582;
          RepTravAntDly = 234.5;
         RepTravDly = RepTravIntDly + RepTravAntDly - RepTravRefDly;

         (*Travelling receiver internal settings:*)
         RxTravIntDly = 68;
           RxTravRefDly = 582;
          RxTravAntDly = 235;
         RxTravDly = RxTravIntDly + RxTravAntDly - RxTravRefDly;
         TravCorrection = RepTravDly - RxTravDly;

       > Read 819 tracks from g:\APMP_Cal\host.kriss.dat

       > Read 802 tracks from g:\APMP_Cal\trav.kriss.dat

In[45]:= << Graphics`Graphics`
```

In[46]:=
```
ListPlot[MakeXY[Map[DateValue, dataTrav], Map[RefGPS, dataTrav]]];
```



In[47]:=
```
ListPlot[MakeXY[Map[DateValue, dataHost], Map[RefGPS, dataHost]]];
```



In[48]:=
```
dMerge = MergeCCTF[dataHost, dataTrav];
```

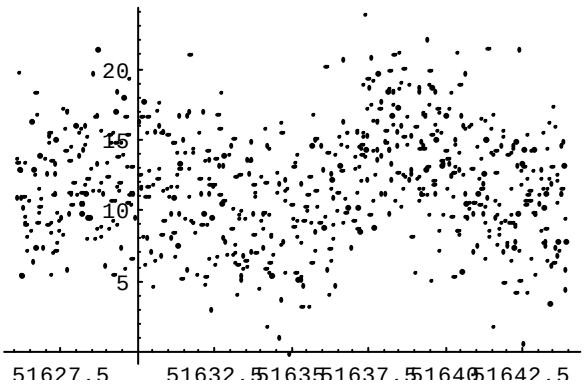
```
> First 819 tracks, second 802 tracks, matching 707 tracks
```

In[49]:=
```
diffdataGPS =
  Map[{DateValue[#1], RefSV[#1] - RefSV2[#1] - HostCorrection + TravCorrection,
     TrackLength[#1], TrackLength2[#1]} &, dMerge];
```

In[50]:=
```
diffdataGPS = FilterTrackLength[diffdataGPS, 780];
```

```
689 common tracks out of 707 were of length greater than or equal to 780 seconds.
```

In[51]:=
```
ListPlot[diffdataGPS, PlotRange → All];
```



In[52]:=
```
<< Statistics`LinearRegression`
```

In[53]:=
```
regress = Regress[diffdataGPS, {1, x}, x];
rtable = ANOVATable /. regress;
ptable = ParameterTable /. regress;
MJDFirst = First[dMerge][[3]];
MJDLast = Last[dMerge][[3]];
MJDMiddle = MJDFirst + (MJDFirst - MJDLast) / 2;
intercept = ptable[[1, 1, 1]];
SEintercept = ptable[[1, 1, 2]];
slope = ptable[[1, 2, 1]];
SEslope = ptable[[1, 2, 2]];
rms = Sqrt[rtable[[1, 2, 3]]];
MeanOffset = intercept + slope * MJDMiddle;
Print["Summary"];
Print[Length[dMerge], " common-view tracks were analysed between MJD ",
 MJDFirst, " and MJD ", MJDLast];
Print["The mean offset (Host Rx - Travelling Rx) between the two receivers was ",
 MeanOffset, " ns, with an RMS deviation of ", rms, "  ns."];
Print["The slope of the line of best fit was ", slope * 1000,
  " ps/day, with a standard error of ", SEslope * 1000, " ps/day."];
```

```
Summary

707 common-view tracks were analysed between MJD 51626 and MJD 51643

The mean offset (Host Rx - Travelling Rx) between the two receivers was
 11.1761 ns, with an RMS deviation of 3.92408  ns.

The slope of the line of best fit was
 29.9232 ps/day, with a standard error of 28.5451 ps/day.
```