# ■ Processing APMP_Cal data from TL Taiwan

```
Off[General::spell1];

dataPath = "g:\\APMP_Cal\\";
```

■ Definitions

```
dataHost = ReadCCTF["TL.TL_sorted"];
(*Host  reported values:*)
RepHostIntDly = 50;
  RepHostRefDly = 51;
 RepHostAntDly = 229;
RepHostDly = RepHostIntDly + RepHostAntDly - RepHostRefDly;

(*Host  Receiver internal settings:*)
RxHostIntDly = 50;
  RxHostRefDly = 51;
 RxHostAntDly = 229;
RxHostDly = RxHostIntDly + RxHostAntDly - RxHostRefDly;
HostCorrection = RepHostDly - RxHostDly;

dataTrav = ReadCCTF["TL.Trx_sorted"];
(*Host   reported values:*)
RepTravIntDly = 68;
  RepTravRefDly = 51;
 RepTravAntDly = 234.5;
RepTravDly = RepTravIntDly + RepTravAntDly - RepTravRefDly;

(*Travelling receiver internal settings:*)
RxTravIntDly = 68;
  RxTravRefDly = 51;
 RxTravAntDly = 235;
RxTravDly = RxTravIntDly + RxTravAntDly - RxTravRefDly;
TravCorrection = RepTravDly - RxTravDly;
```

```
> Read 657 tracks from g:\APMP_Cal\TL.TL_sorted

> Read 743 tracks from g:\APMP_Cal\TL.Trx_sorted

<< Graphics`Graphics`
```

ListPlot[MakeXY[Map[DateValue, dataTrav], Map[RefGPS, dataTrav]]];
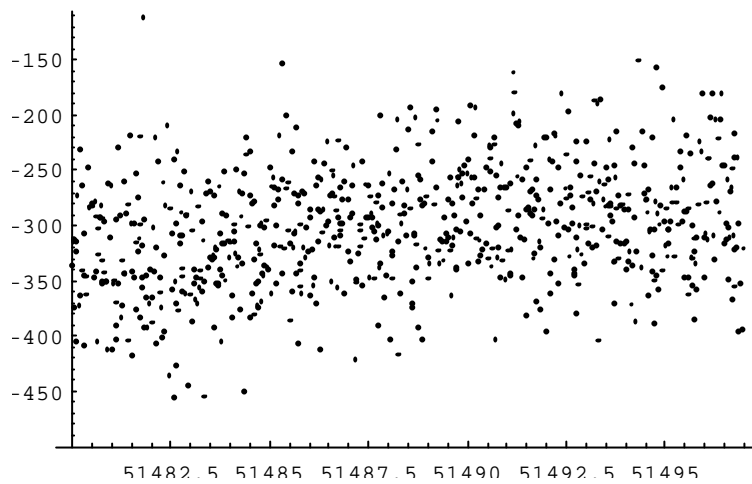
ListPlot[MakeXY[Map[DateValue, dataHost], Map[RefGPS, dataHost]]];
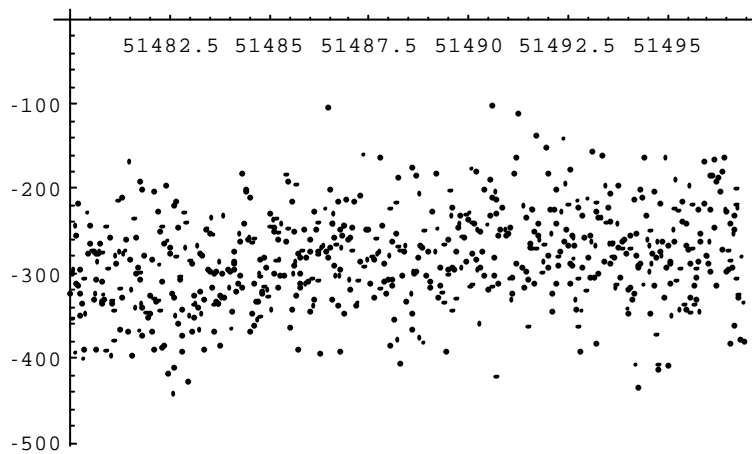
dMerge = MergeCCTF[dataHost, dataTrav];

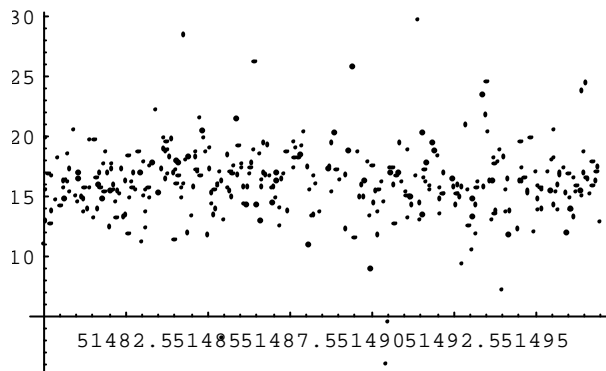> First 657 tracks, second 743 tracks, matching 376 tracks

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

diffdataGPS = FilterTrackLength[diffdataGPS, 780];

348 common tracks out of 376 were of length greater than or equal to 780 seconds.

```
ListPlot[diffdataGPS, PlotRange → All];
```



```
<< Statistics`LinearRegression`

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

376 common-view tracks were analysed between MJD 51480 and MJD 51496

The mean offset (Host Rx - Travelling Rx) between the two receivers was
 16.3084 ns, with an RMS deviation of 2.96283  ns.

The slope of the line of best fit was
 -13.23 ps/day, with a standard error of 31.5288 ps/day.
```