

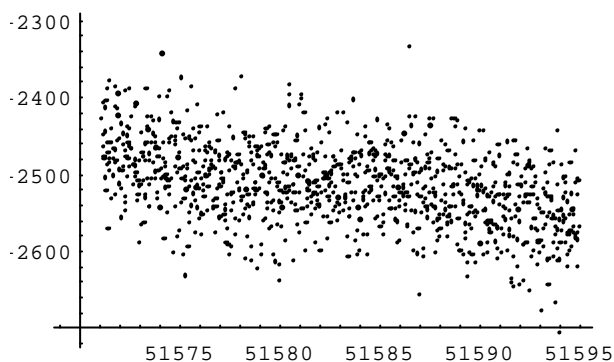
■ Processing APMP_Cal data from NRLM Japan

```
Off [General::spell1];  
  
dataPath = "g:\\APMP_Cal\\";
```

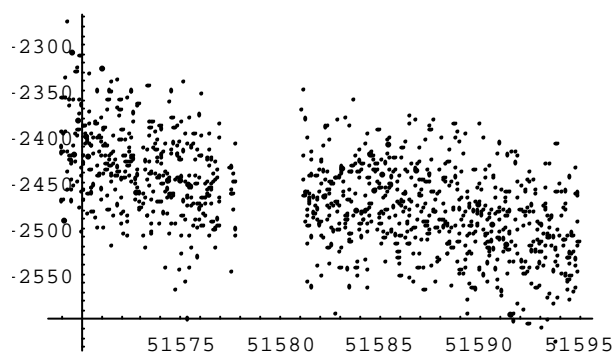
■ Definitions

```
dataHost = ReadCCTF["Host.NRLM"];  
(*Host reported values:*)  
RepHostIntDly = 64;  
  RepHostRefDly = 89;  
  RepHostAntDly = 250;  
RepHostDly = RepHostIntDly + RepHostAntDly - RepHostRefDly;  
  
(*Host Receiver internal settings:*)  
RxHostIntDly = 64;  
  RxHostRefDly = 89;  
  RxHostAntDly = 250;  
RxHostDly = RxHostIntDly + RxHostAntDly - RxHostRefDly;  
HostCorrection = RepHostDly - RxHostDly;  
  
dataTrav = ReadCCTF["Trav.NRLM"];  
(*Host reported values:*)  
RepTravIntDly = 68;  
  RepTravRefDly = 0;  
  RepTravAntDly = 234.5;  
RepTravDly = RepTravIntDly + RepTravAntDly - RepTravRefDly;  
  
(*Travelling receiver internal settings:*)  
RxTravIntDly = 68;  
  RxTravRefDly = 0;  
  RxTravAntDly = 235;  
RxTravDly = RxTravIntDly + RxTravAntDly - RxTravRefDly;  
TravCorrection = RepTravDly - RxTravDly;  
  
> Read 1004 tracks from g:\APMP_Cal\Host.NRLM  
> Read 1101 tracks from g:\APMP_Cal\Trav.NRLM  
  
<< Graphics`Graphics`
```

```
ListPlot[MakeXY[Map[DateValue, dataTrav], Map[RefGPS, dataTrav]]];
```



```
ListPlot[MakeXY[Map[DateValue, dataHost], Map[RefGPS, dataHost]]];
```



```
dMerge = MergeCCTF[dataHost, dataTrav];
```

```
> First 1004 tracks, second 1101 tracks, matching 798 tracks
```

```
diffdataGPS =
```

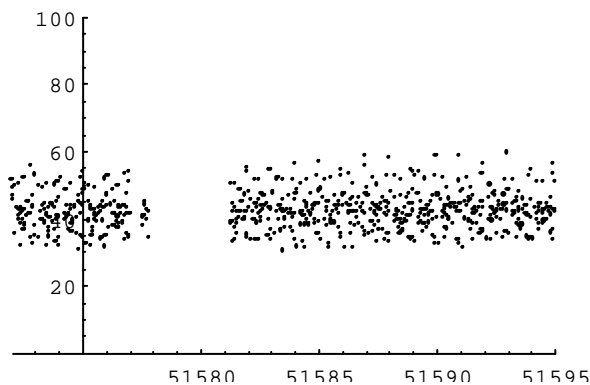
```
  Map[{DateValue[#1], RefSV[#1] - RefSV2[#1] - HostCorrection + TravCorrection,
       TrackLength[#1], TrackLength2[#1]} &, dMerge];
```

```
diffdataGPS = FilterTrackLength[diffdataGPS, 780];
```

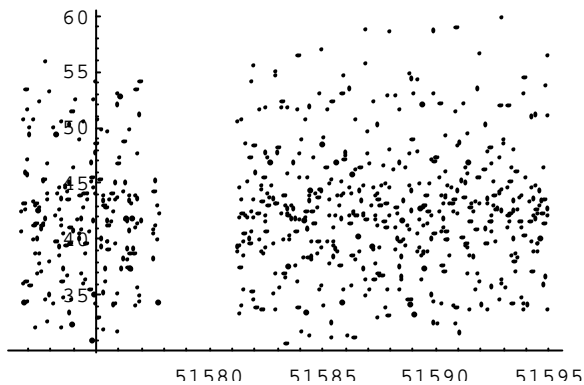
```
775 common tracks out of 798 were of length greater than or equal to 780 seconds.
```

```
diffdataGPS = Drop[diffdataGPS, 30];
```

```
ListPlot[diffdataGPS, PlotRange -> {{51572, 51595}, {0, 100}}];
```



```
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
```

```
798 common-view tracks were analysed between MJD 51569 and MJD 51594
```

```
The mean offset (Host Rx - Travelling Rx) between the two receivers was
41.5435 ns, with an RMS deviation of 5.52938 ns.
```

```
The slope of the line of best fit was
31.4273 ps/day, with a standard error of 29.8056 ps/day.
```