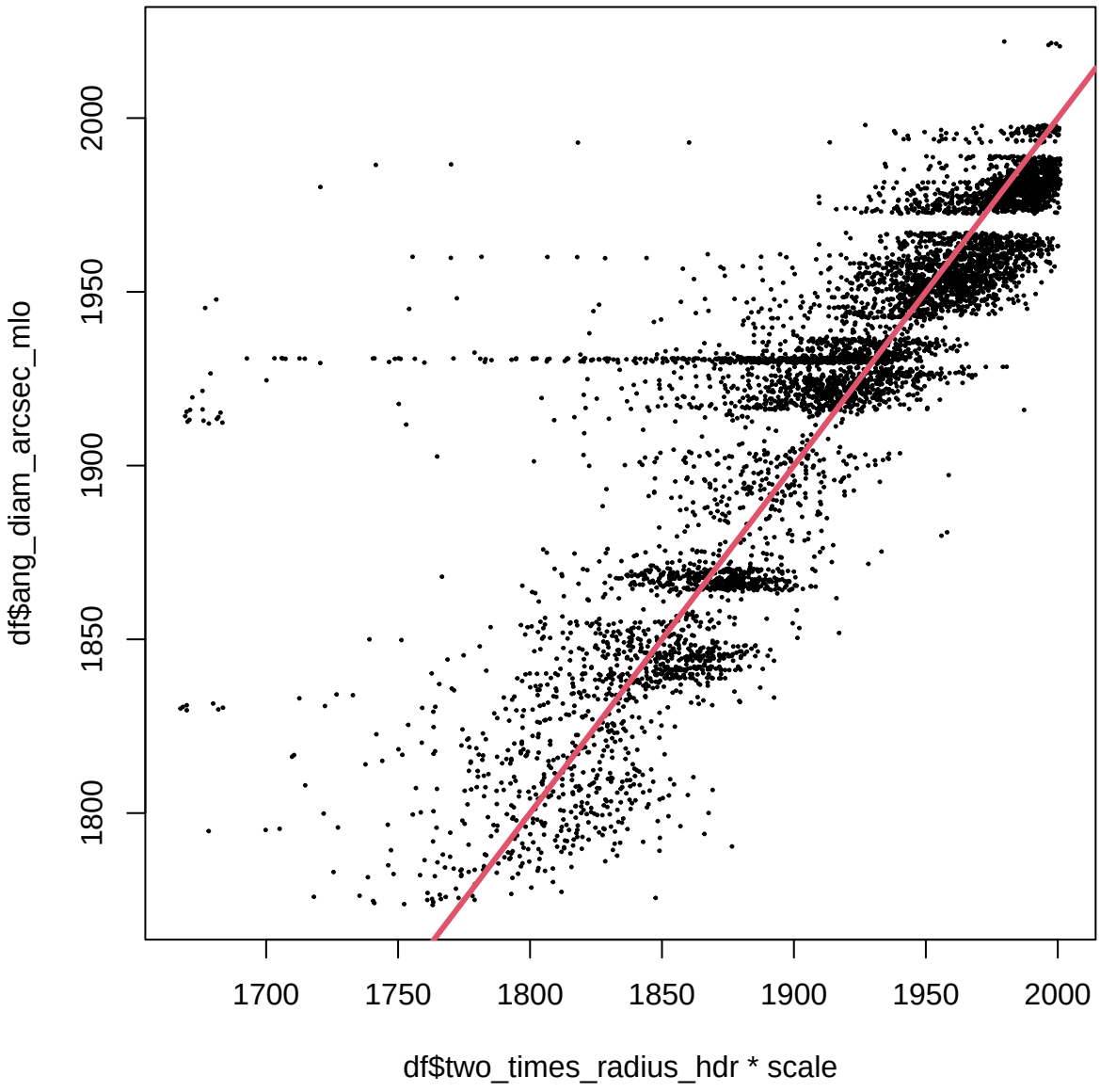
How good are the fitted disk radii?

Compares the lunar disc diameter from ephemeris and that stored inside the FITS cube file headers - these are found with circle fitting and RANSAC.

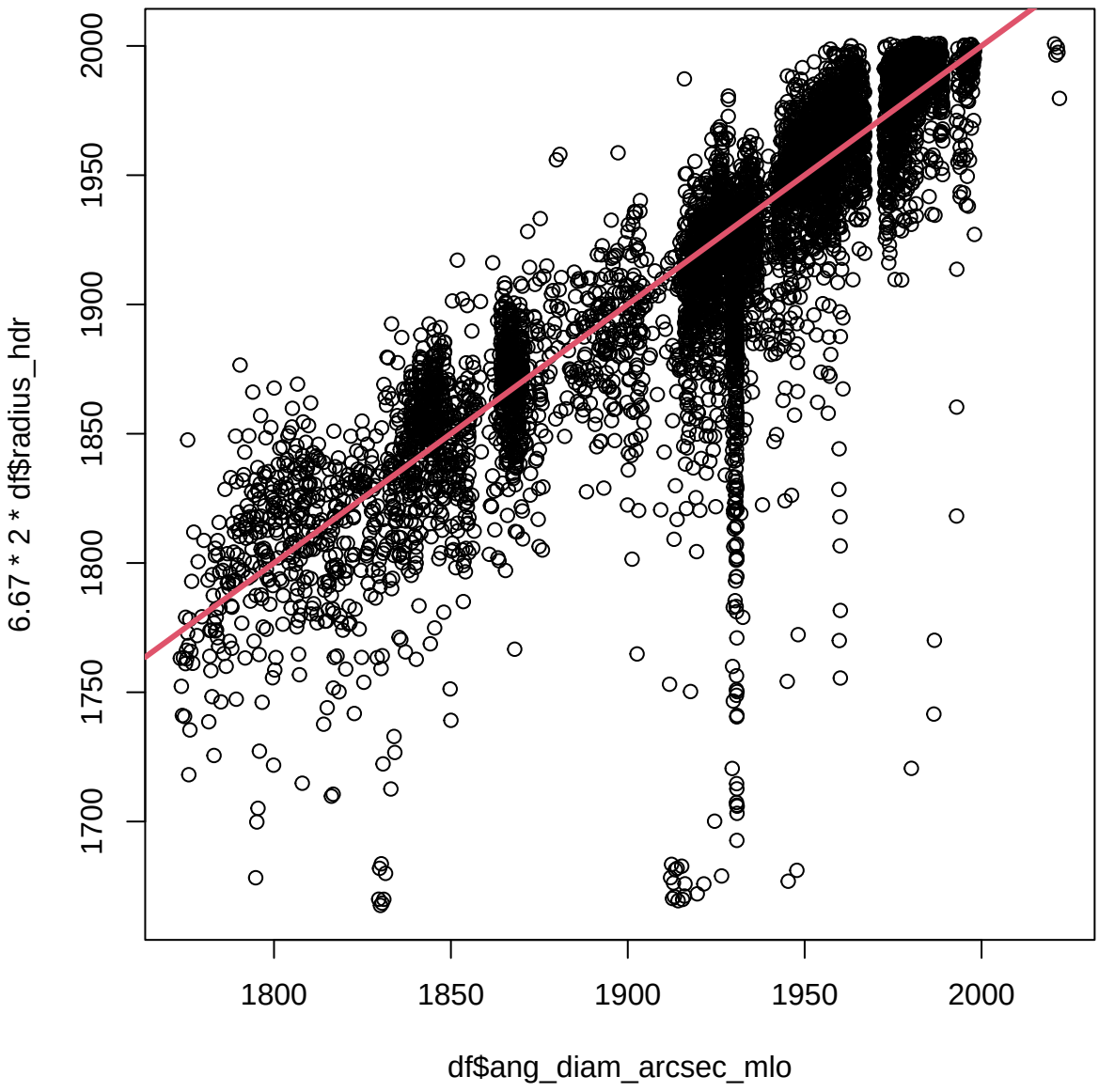
```
rm(list=ls())
setwd("~/WORKSHOP/EARTHSHINE/")

df <- read.csv("OUTPUT/COMBINED/jd_angdiam_2radius.csv",header=T,sep=",")
df <- df[,-1]
df <- df[,-2]
df <- df[,-3]
```

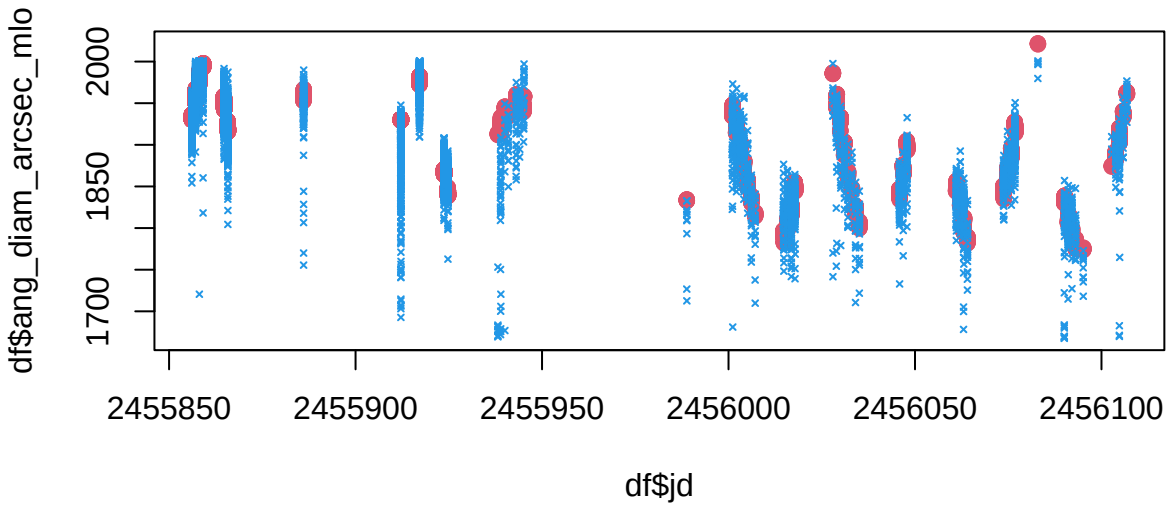
```
scale <- 6.67
plot(df$two_times_radius_hdr*scale,df$ang_diam_arcsec_mlo,pch=19,cex=0.2)
abline(c(0,1),col=2,lwd=3)
```

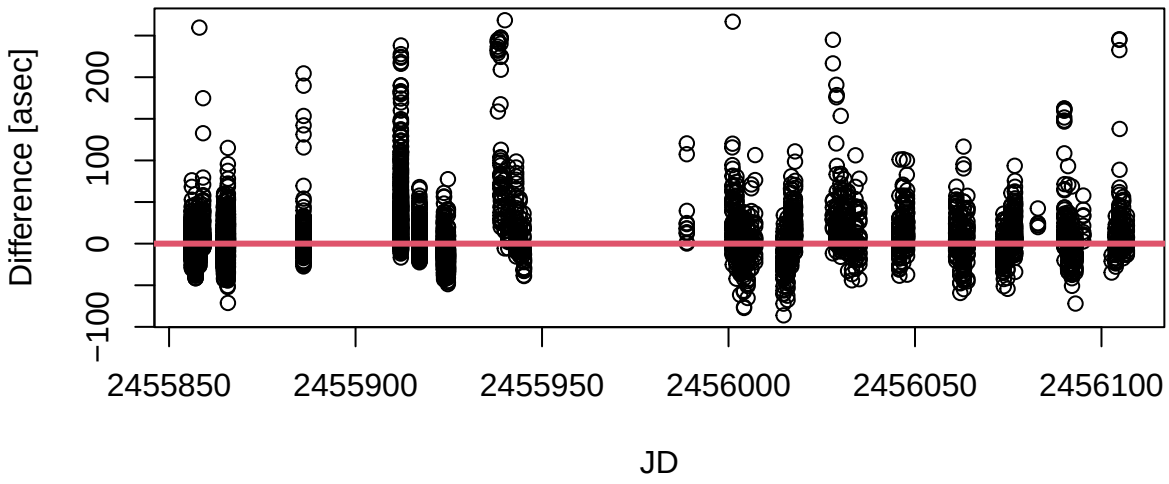



```
plot(df$ang_diam_arcsec_mlo,6.67*2*df$radius_hdr)
abline(c(0,1),col=2,lwd=3)
```




```
par(mfrow=c(2,1))
yran <- range(c(df$ang_diam_arcsec_mlo,6.67*2*df$radius_hdr))
plot(df$jd,df$ang_diam_arcsec_mlo,ylim=yran,col=2,pch=19,cex=1.)
points(df$jd,6.67*2*df$radius_hdr,col=4,pch=4,cex=0.4)
plot(df$jd,df$ang_diam_arcsec_mlo-6.67*2*df$radius_hdr,xlab="JD",ylab="Difference [asec]")
abline(h=0,col=2,lwd=3)
```






```
print(c("SD of difference: ",sd(df$ang_diam_arcsec_mlo-6.67*2*df$radius_hdr)," asec."))
```

```
## [1] "SD of difference: " "31.3472380066755"   " asec."
```

```
print(c("SD of difference: ",sd(df$ang_diam_arcsec_mlo-6.67*2*df$radius_hdr)/6.67," pix."))
```

```
## [1] "SD of difference: " "4.69973583308478"   " pix."
```