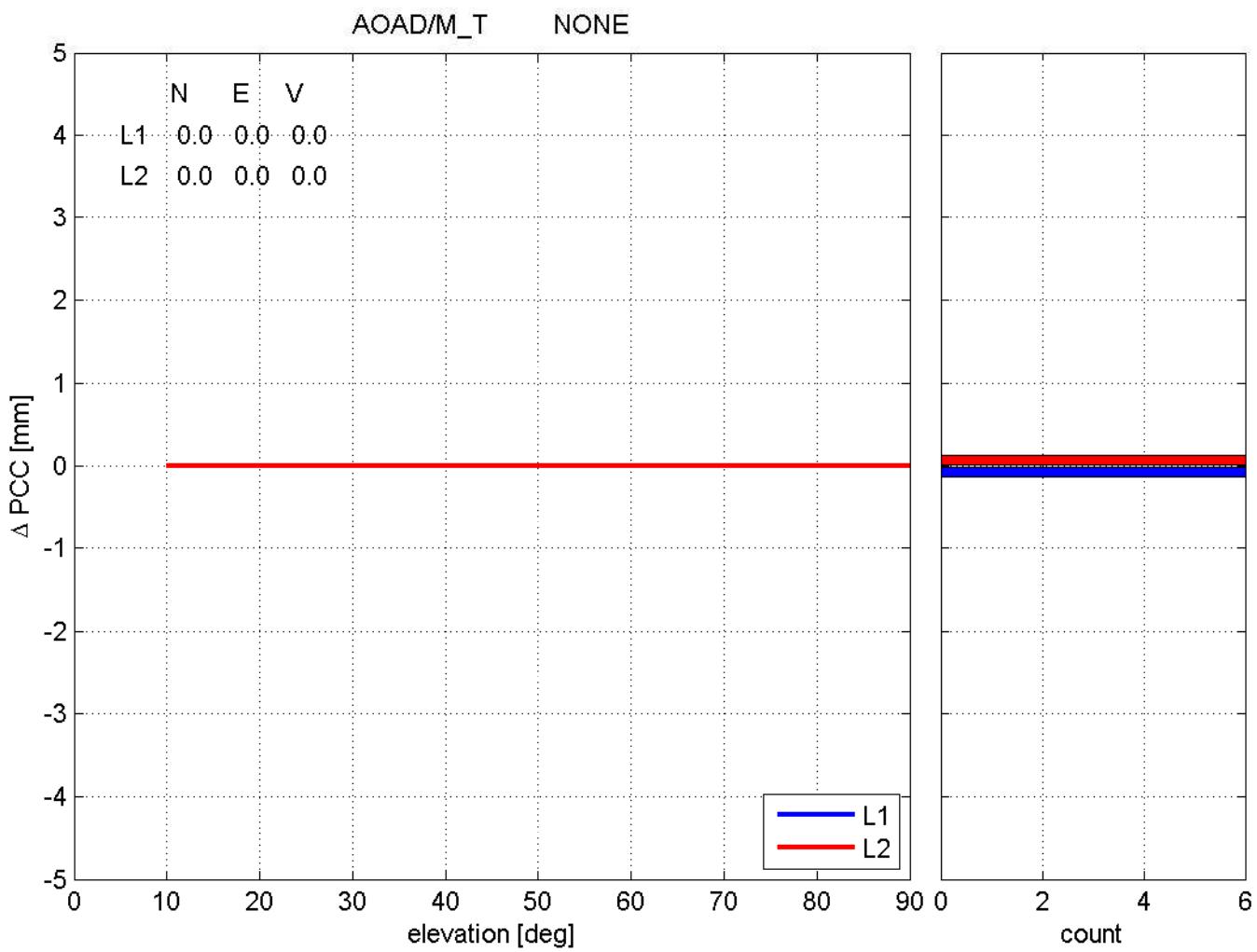


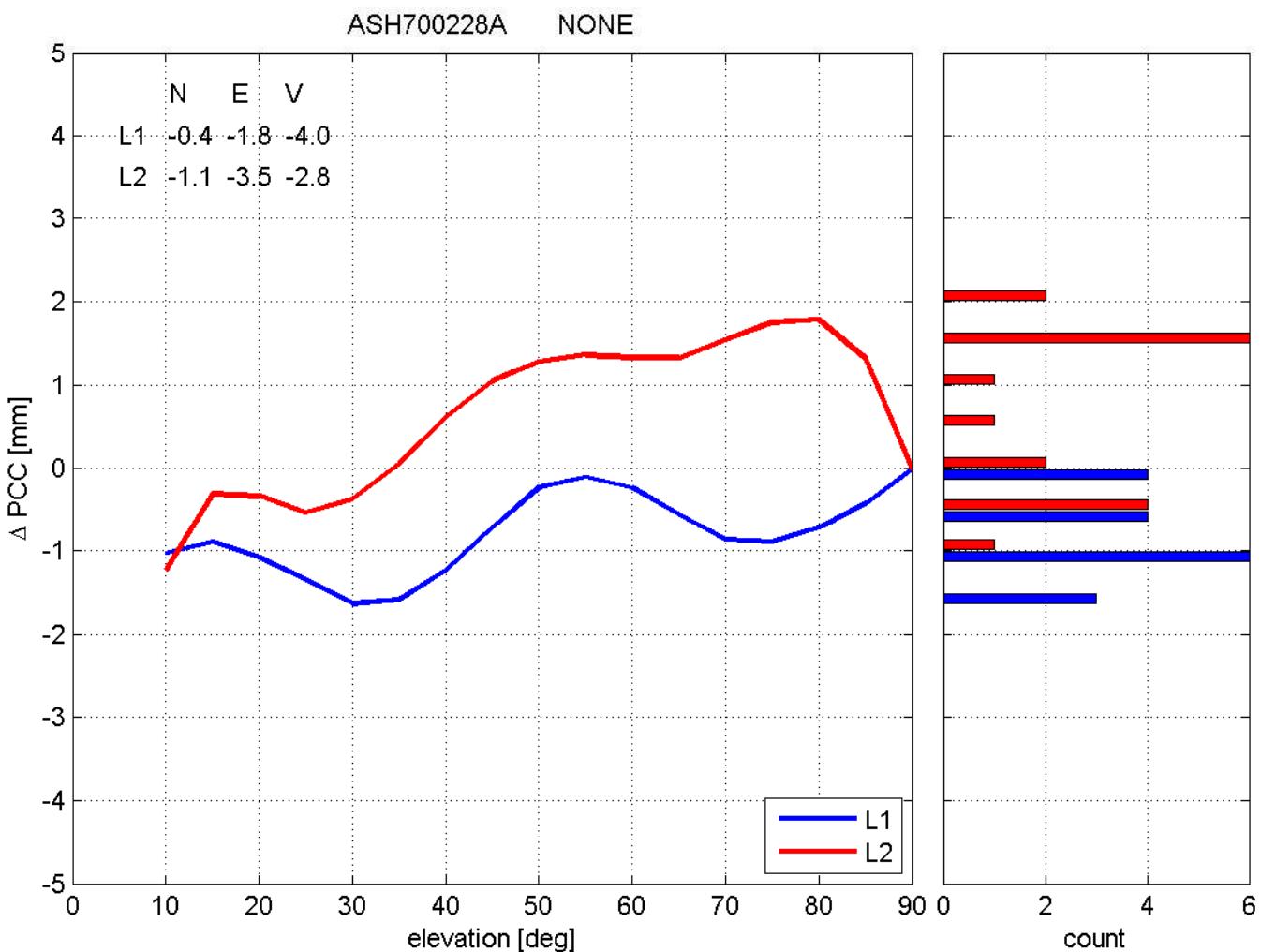
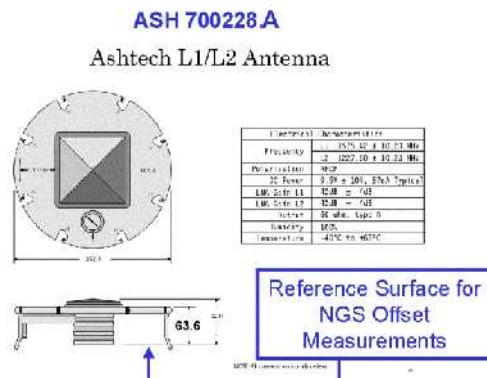
calib date:  
27-Oct-1997

chokering (CR)



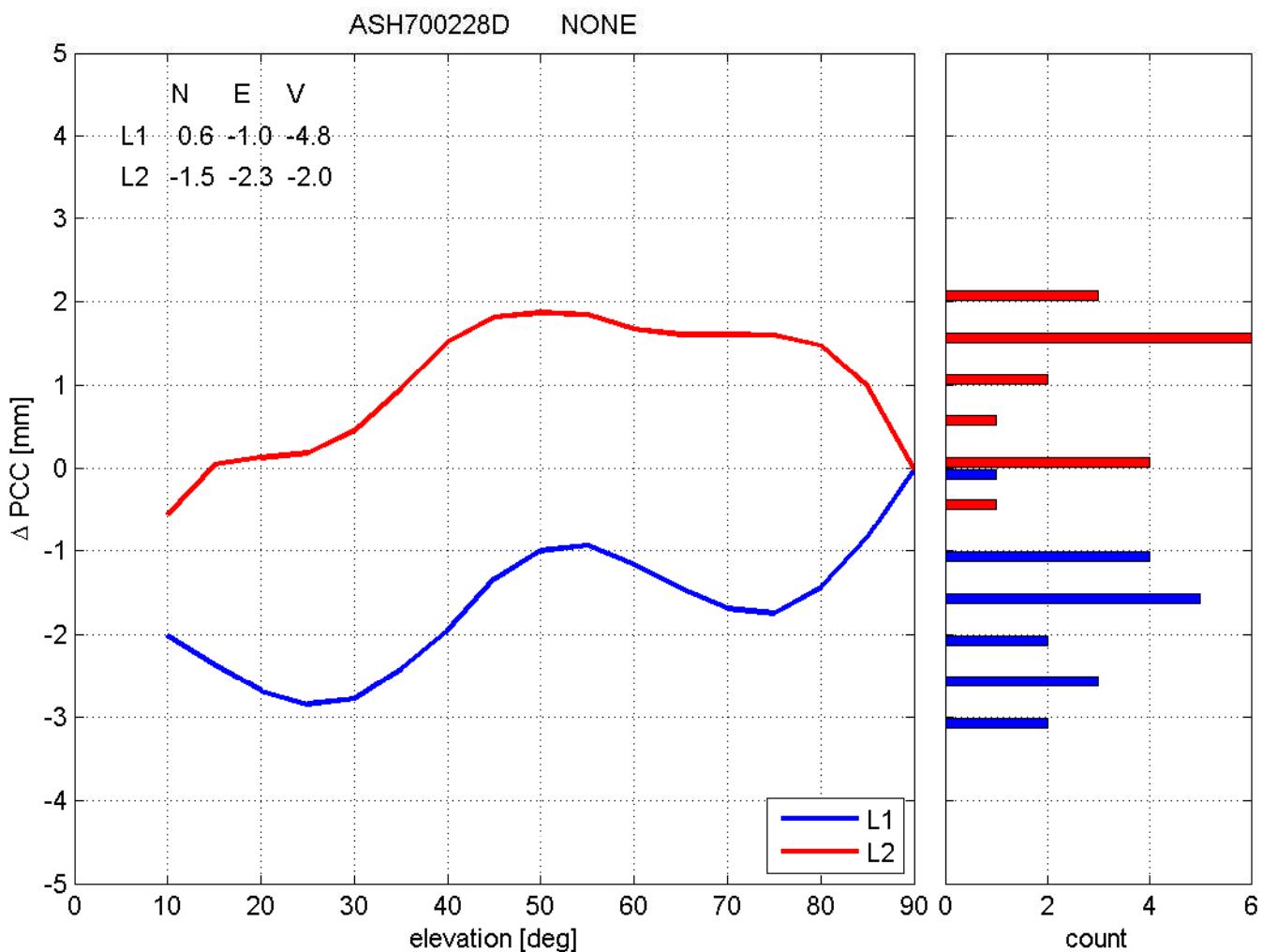
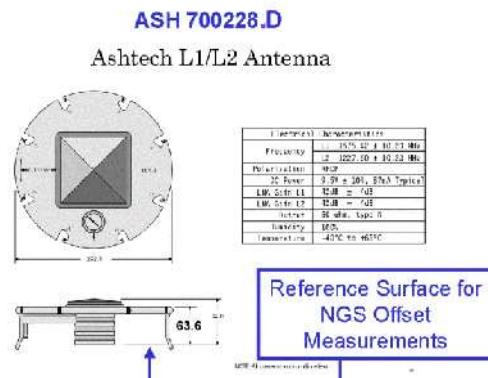
calib date:  
02-Jun-1998

patch with  
groundplane  
(+GP)



calib date:  
27-Oct-1997

patch with  
groundplane  
(+GP)

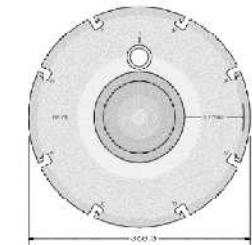


calib date:  
27-Oct-1997

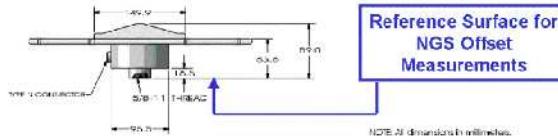
patch with  
groundplane  
(+GP)

### Ashtech L1/L2 "Whopper" Antenna

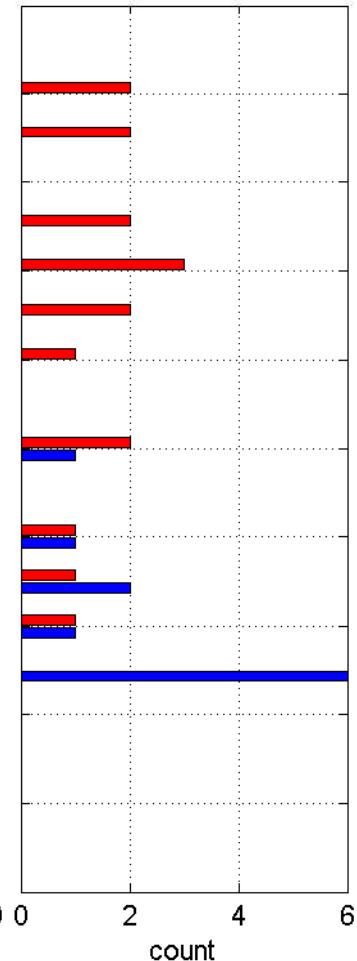
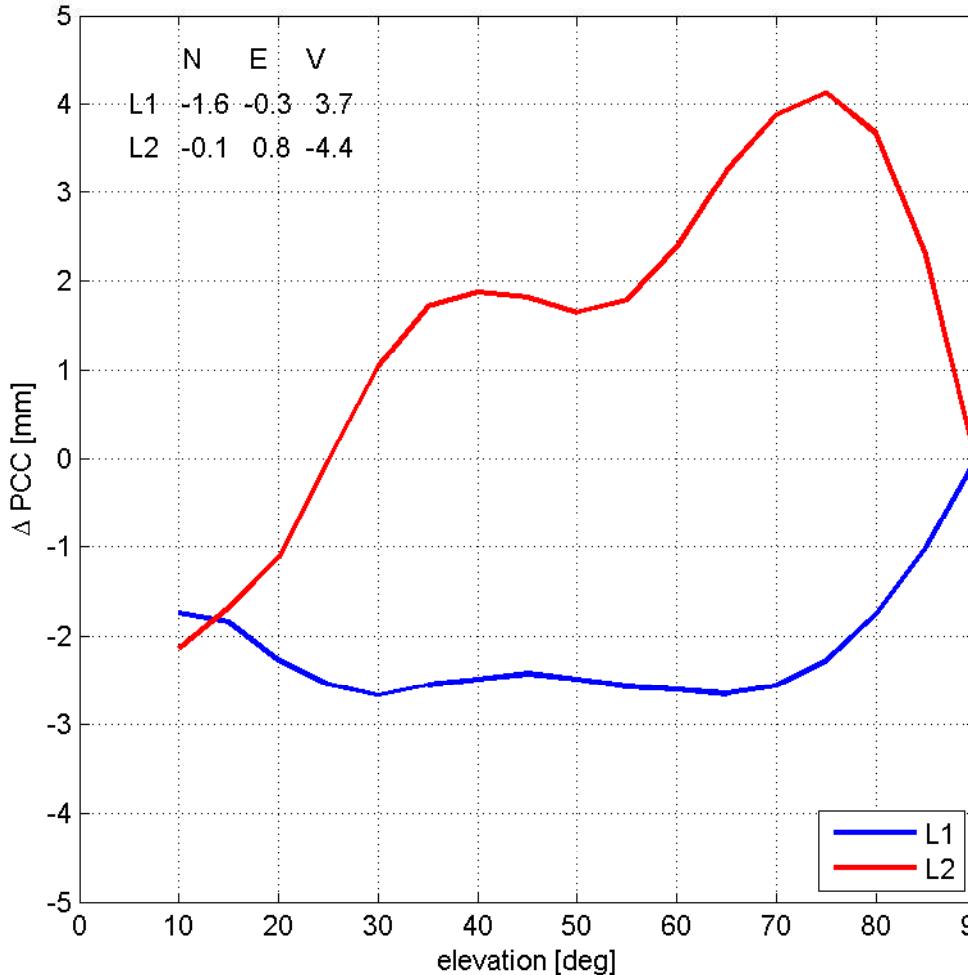
**ASH 700718.B**



| Electrical Characteristics |                         |
|----------------------------|-------------------------|
| Frequency                  | L1 1575.42 ± 10.23 MHz  |
|                            | L2 1227.60 ± 10.23 MHz  |
| Polarization               | HICP                    |
| Antenna Gain               | 5.2 dBiC @ ZENITH       |
| DC Power                   | 5 - 15V, 45 mA, Typical |
| LNA Gain L1                | 39dB ± 3dB              |
| LNA Gain L2                | 39dB ± 3dB              |
| Output                     | 50 ohm, type N          |
| Humidity                   | 100%                    |
| Temperature                | -40°C to +65°C          |



ASH700718B    NONE

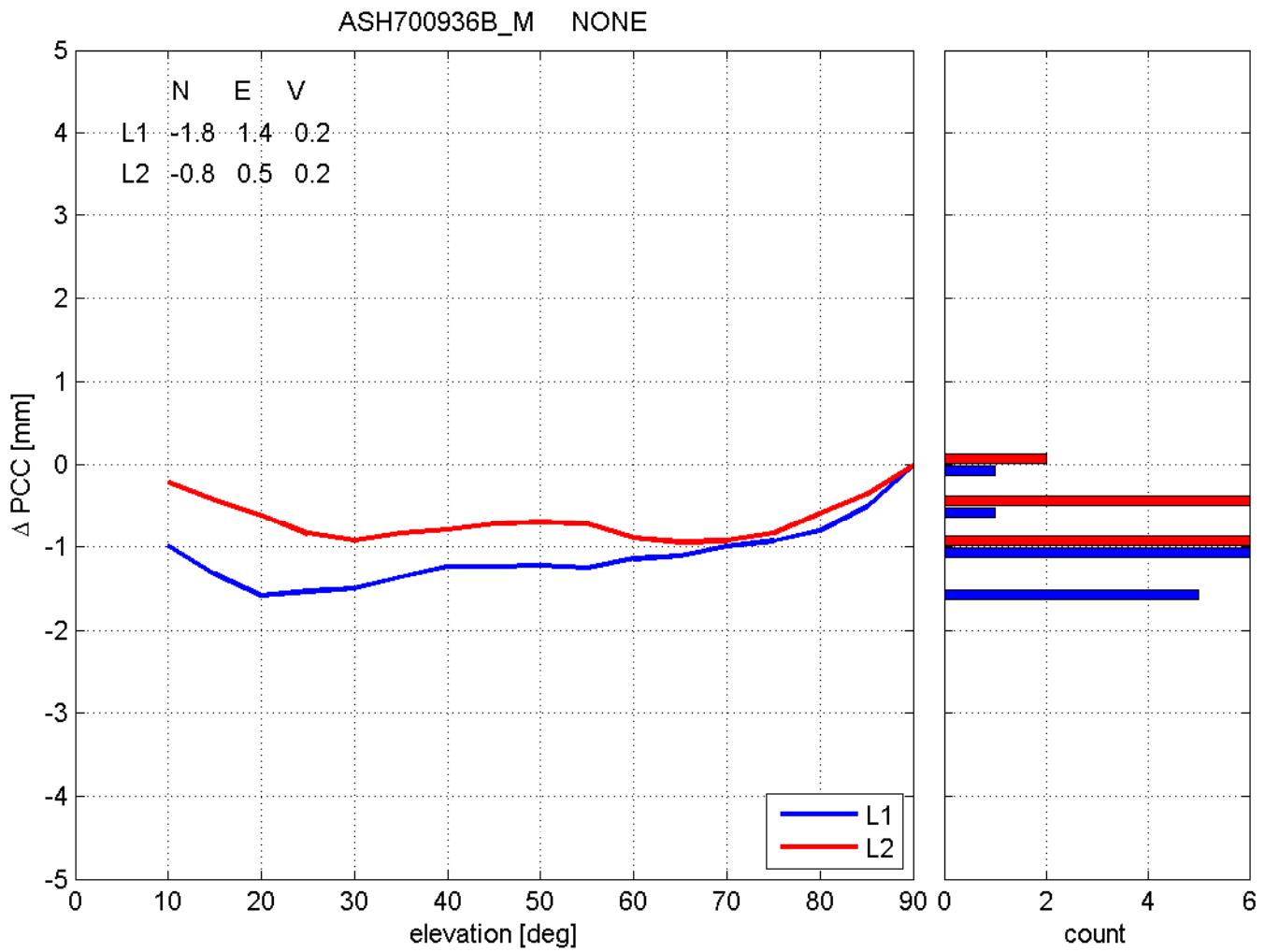
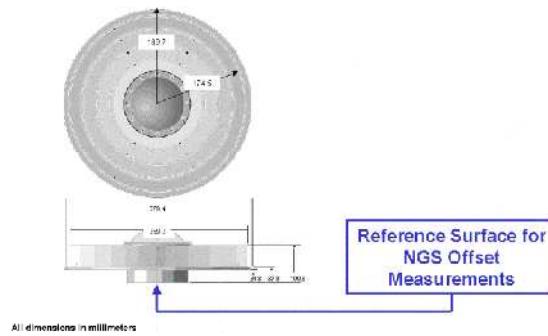


calib date:  
02-Jun-1998

chokering (CR)

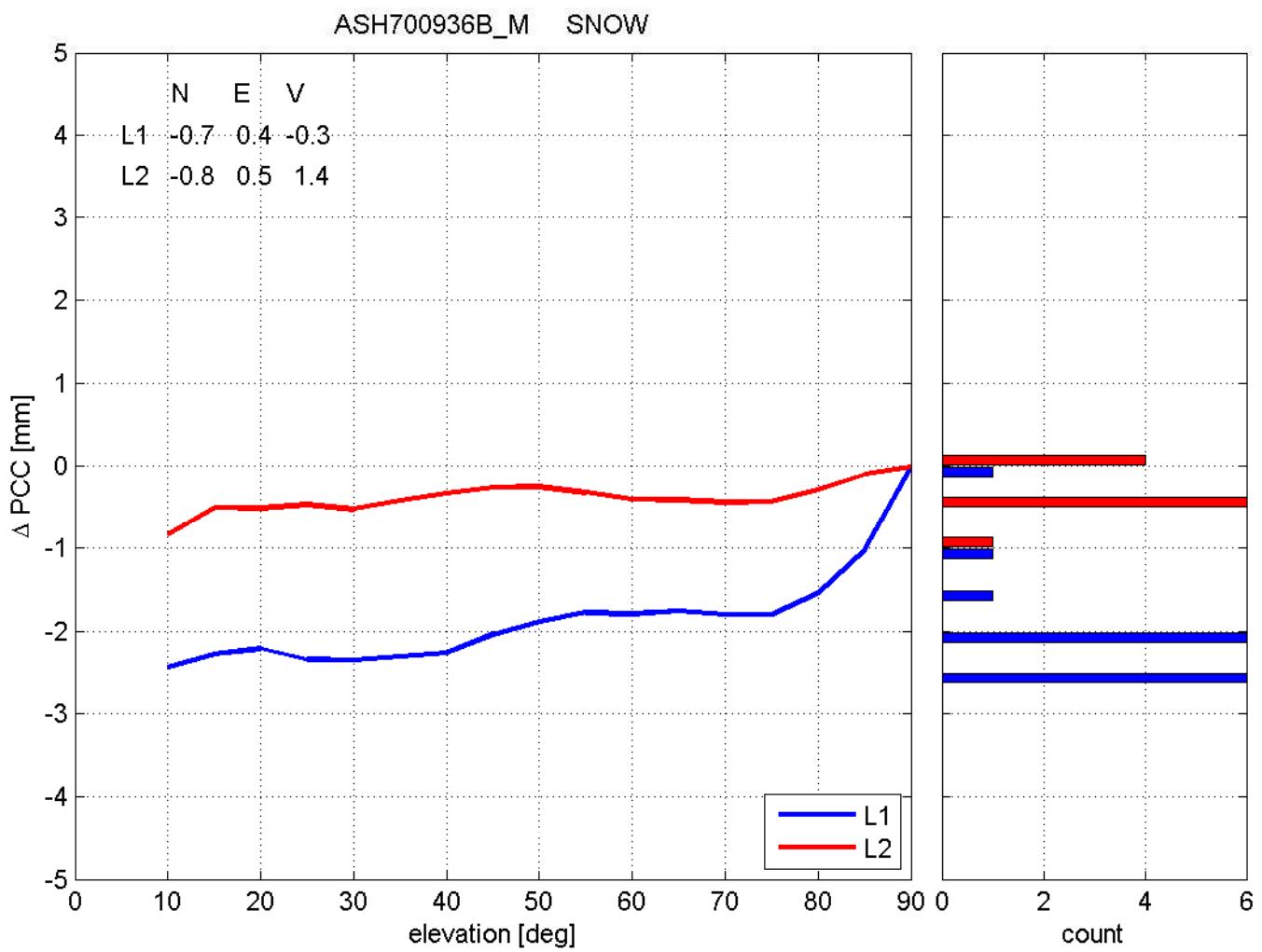
### ASH 700936B\_M

Choke Ring Antenna



calib date:  
27-Oct-1997

chokering (CR)

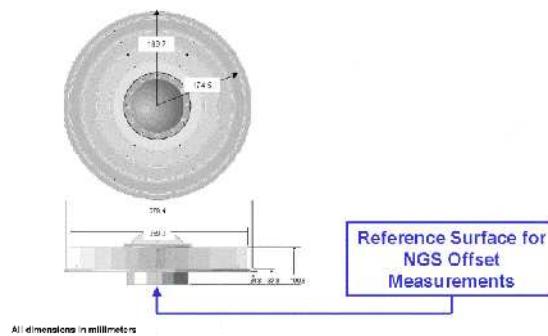


calib date:  
02-Jun-1998

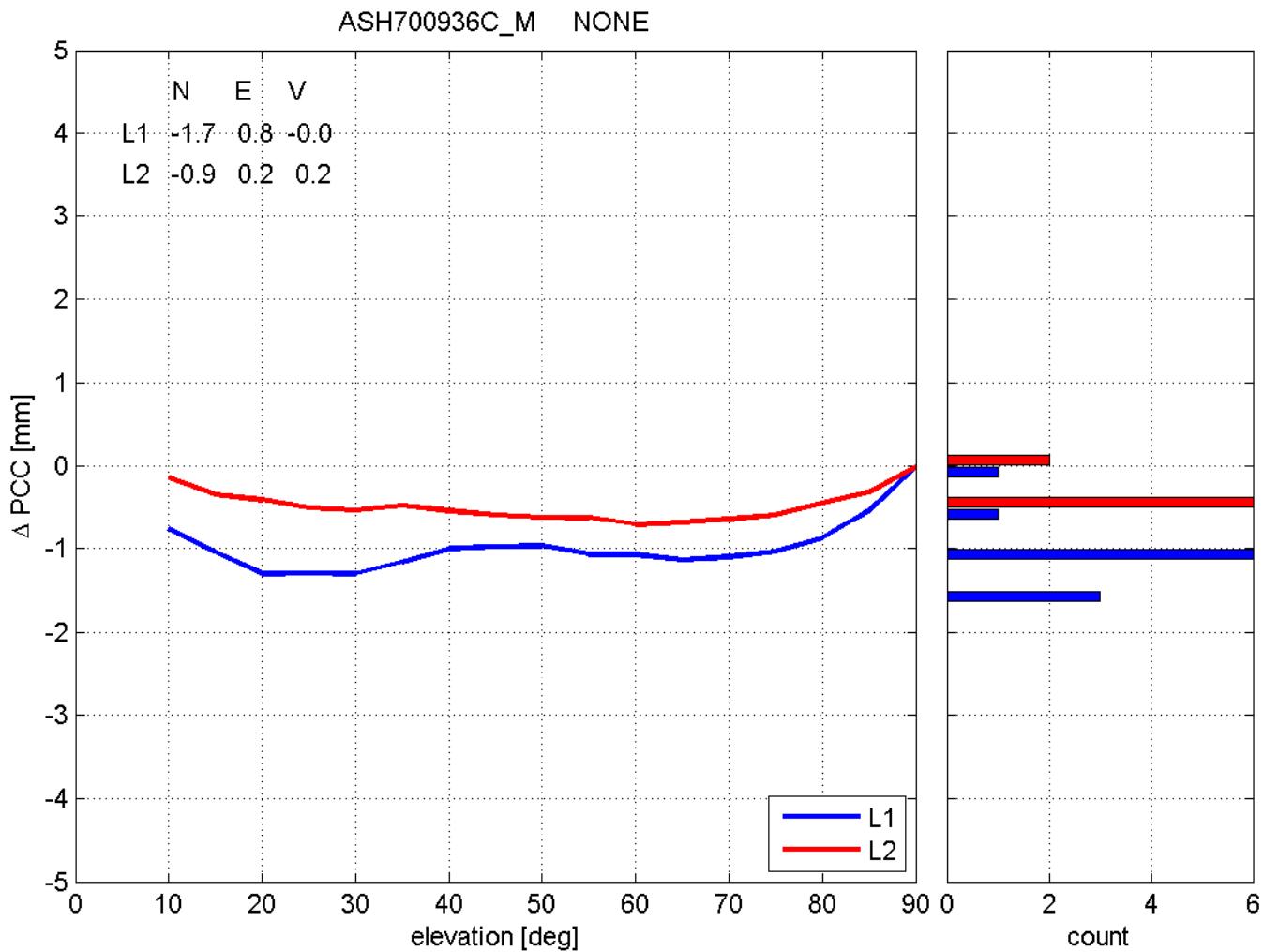
chokering (CR)

**ASH 700936C\_M**

Choke Ring Antenna

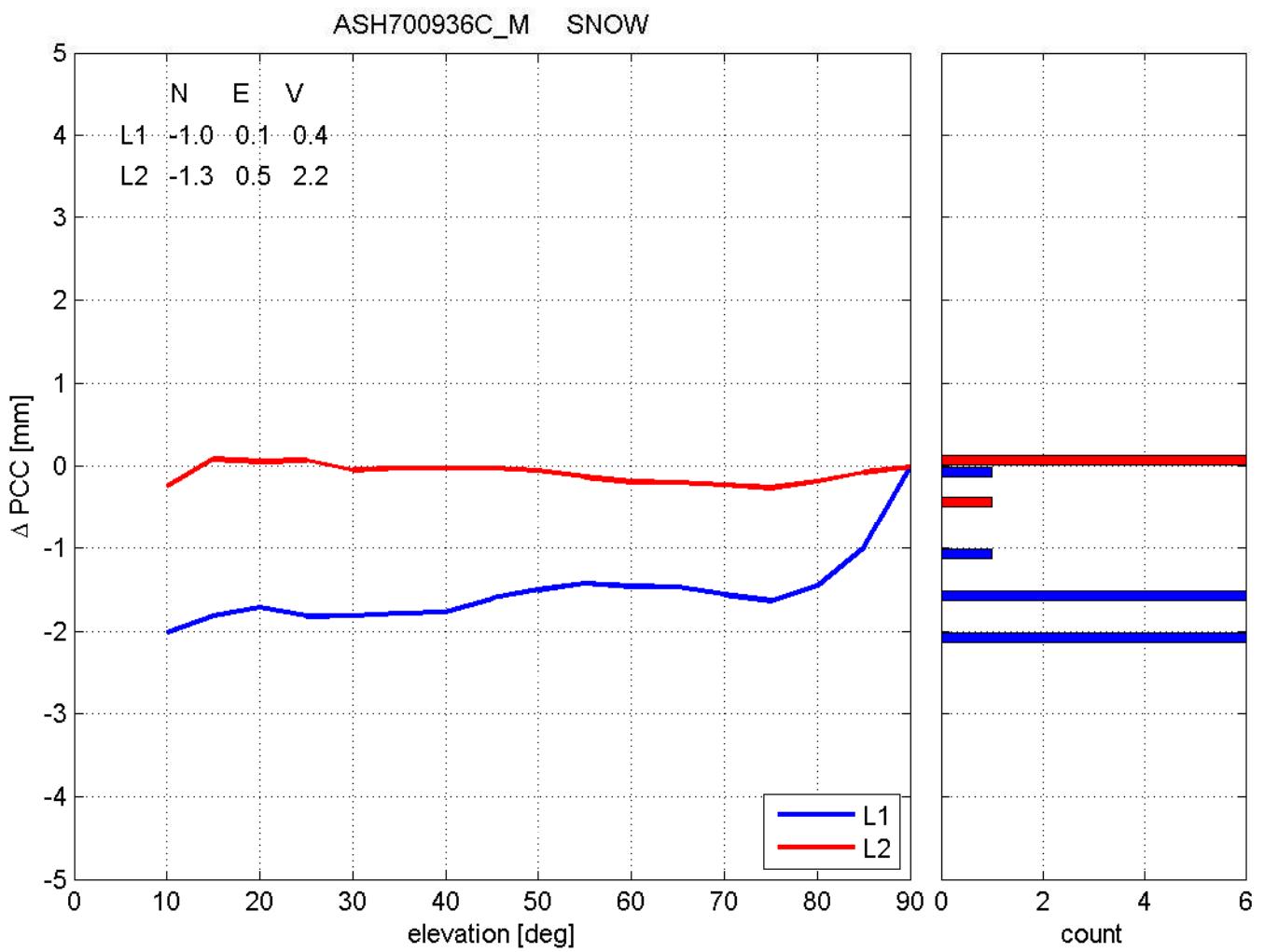
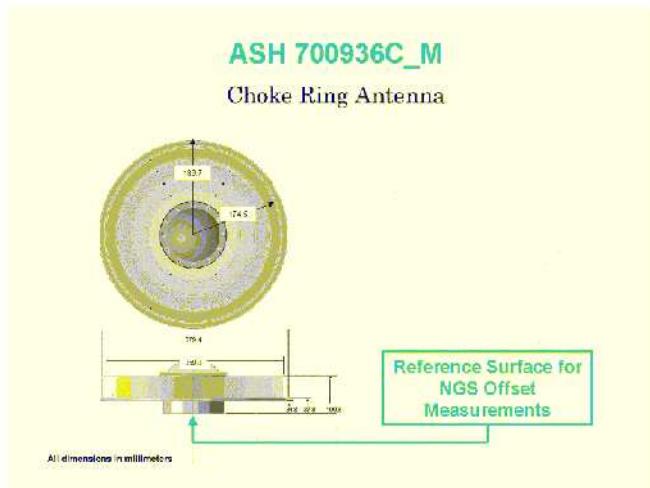


All dimensions in millimeters



calib date:  
27-Oct-1997

chokering (CR)

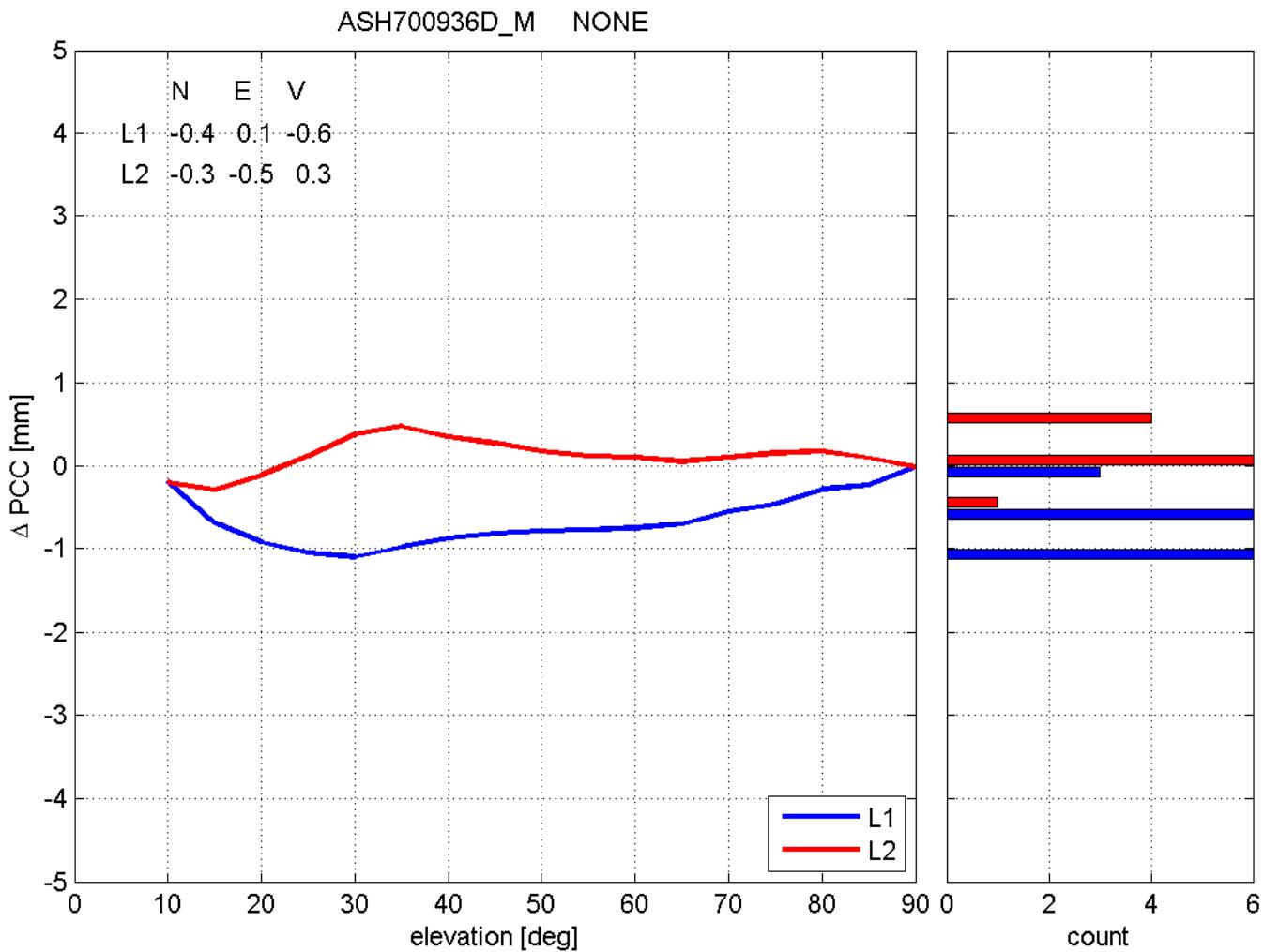
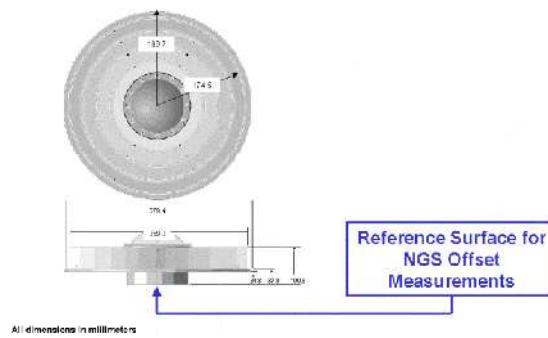


calib date:  
27-Oct-2004

chokering (CR)

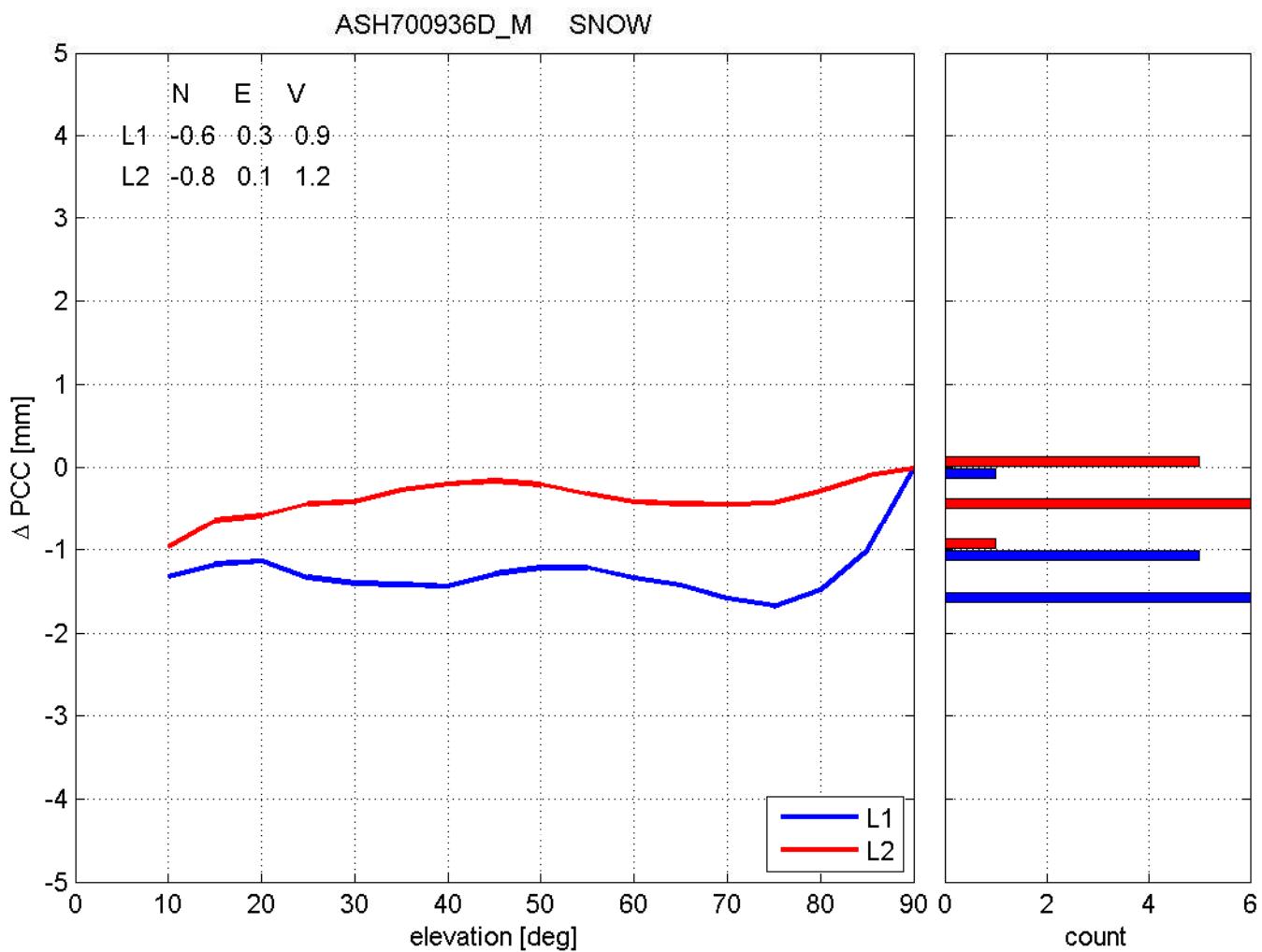
### ASH 700936D\_M

Choke Ring Antenna



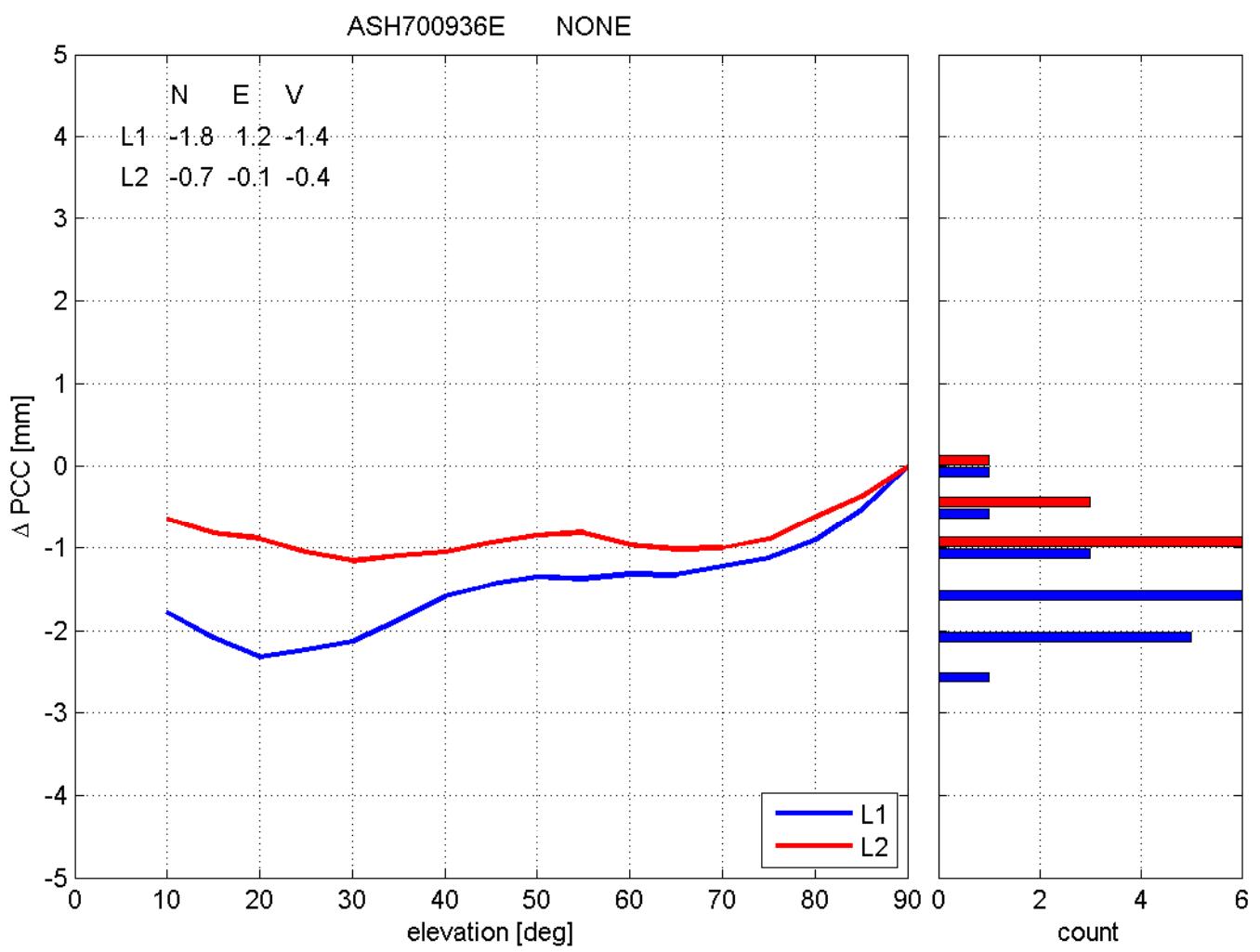
calib date:  
27-Oct-1997

chokering (CR)



calib date:  
26-May-2000

chokering (CR)

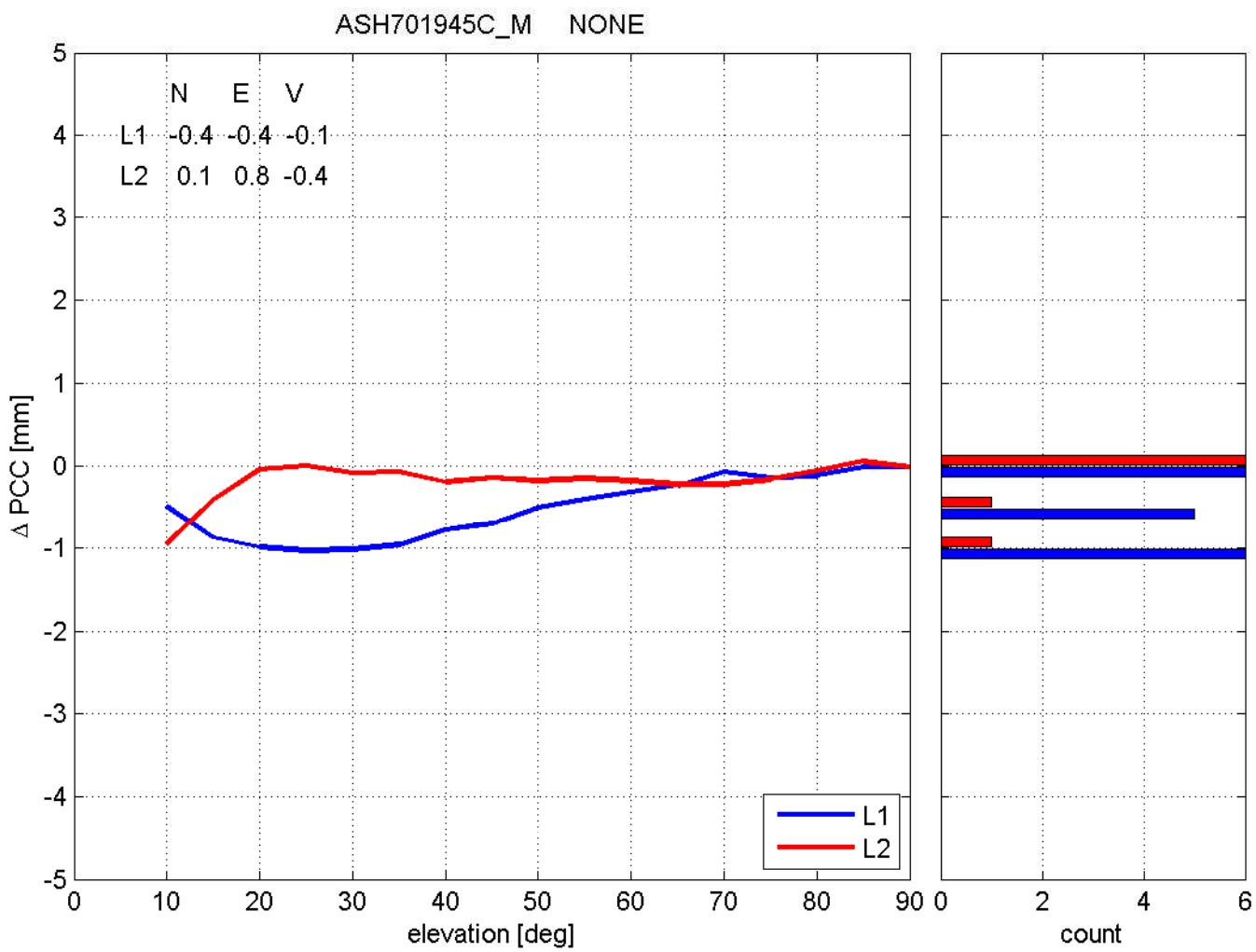
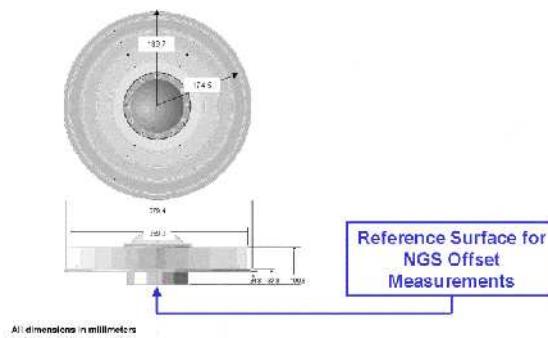


calib date:  
20-Apr-2000

chokering (CR)

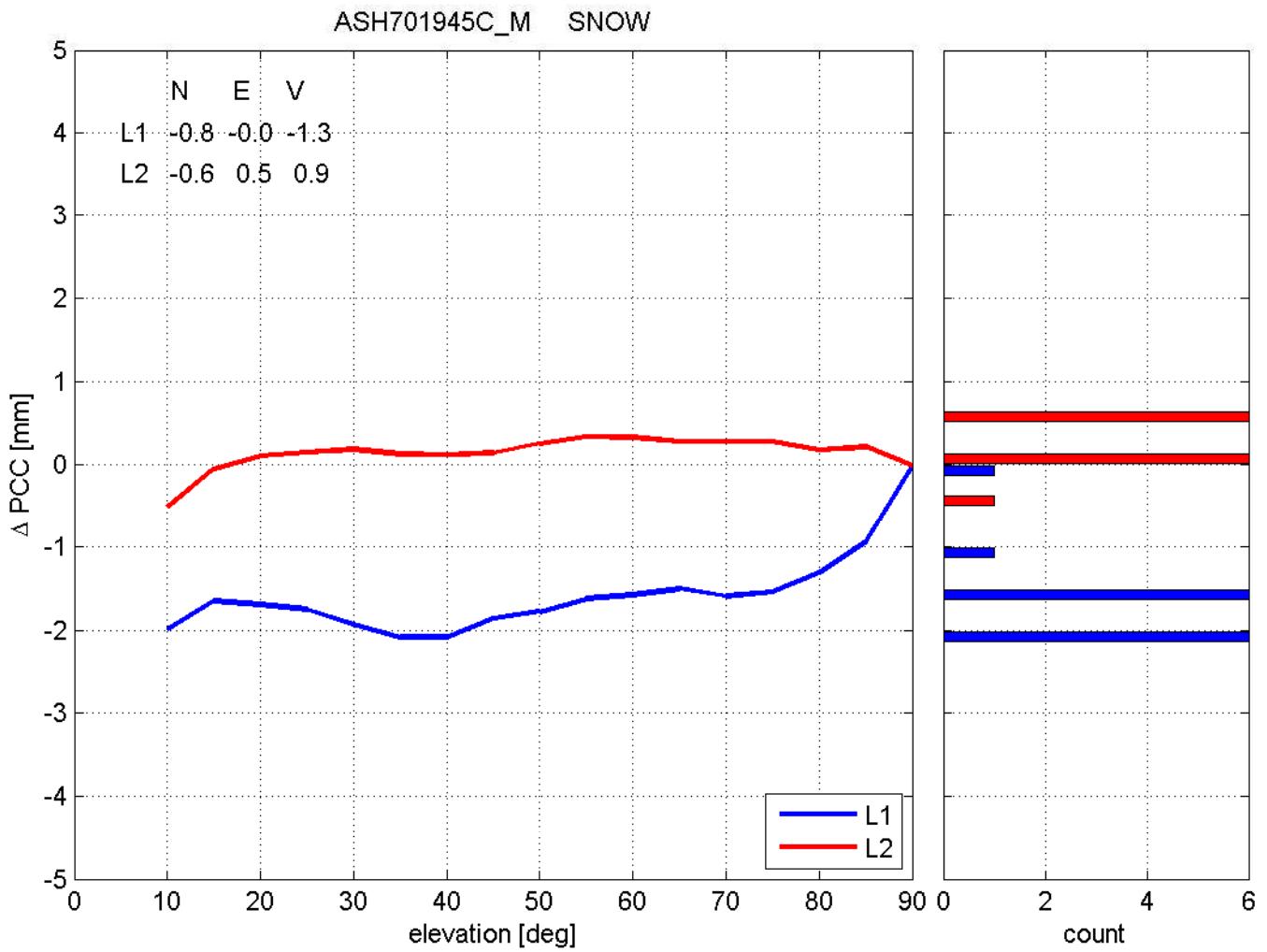
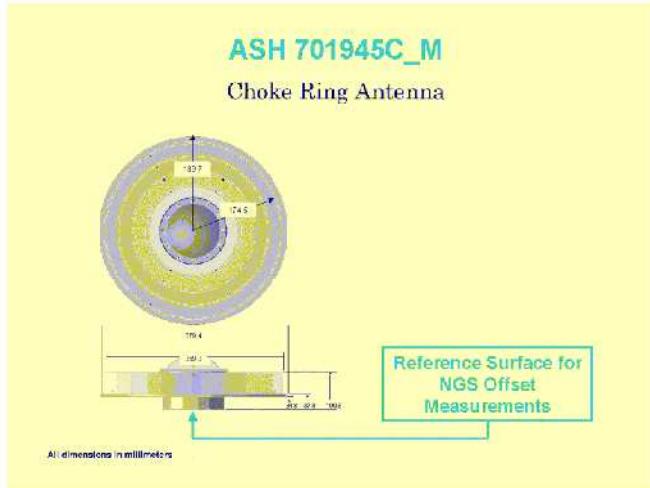
### ASH 701945C\_M

Choke Ring Antenna



calib date:  
17-Mar-2003

chokering (CR)

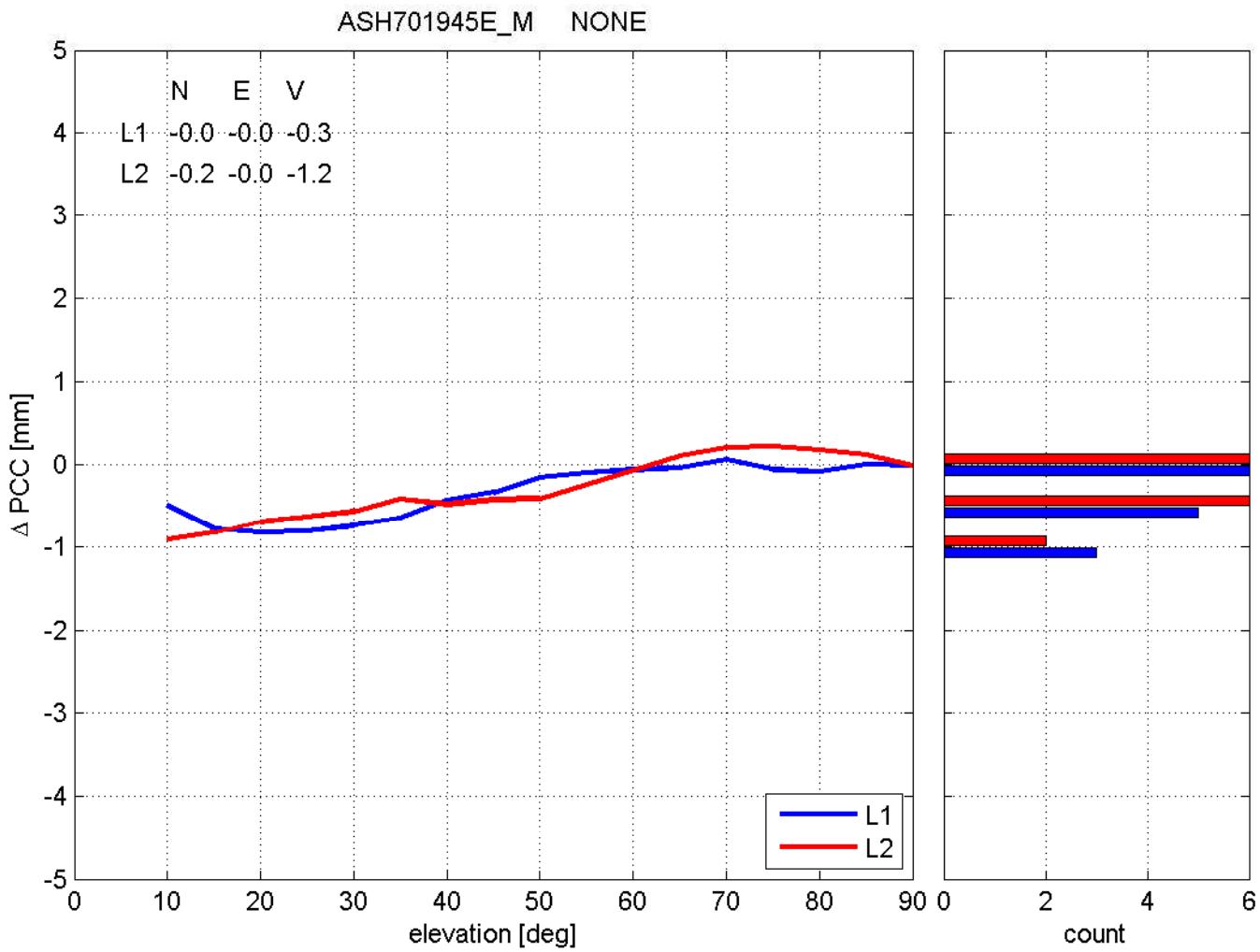
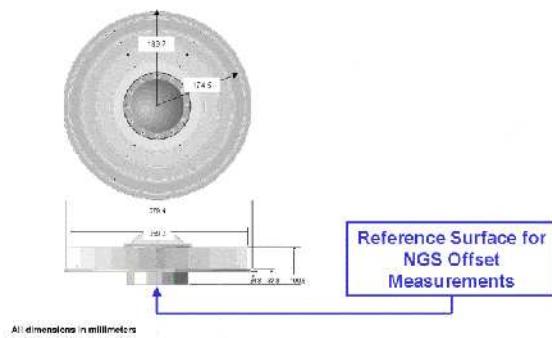


calib date:  
20-Apr-2000

chokering (CR)

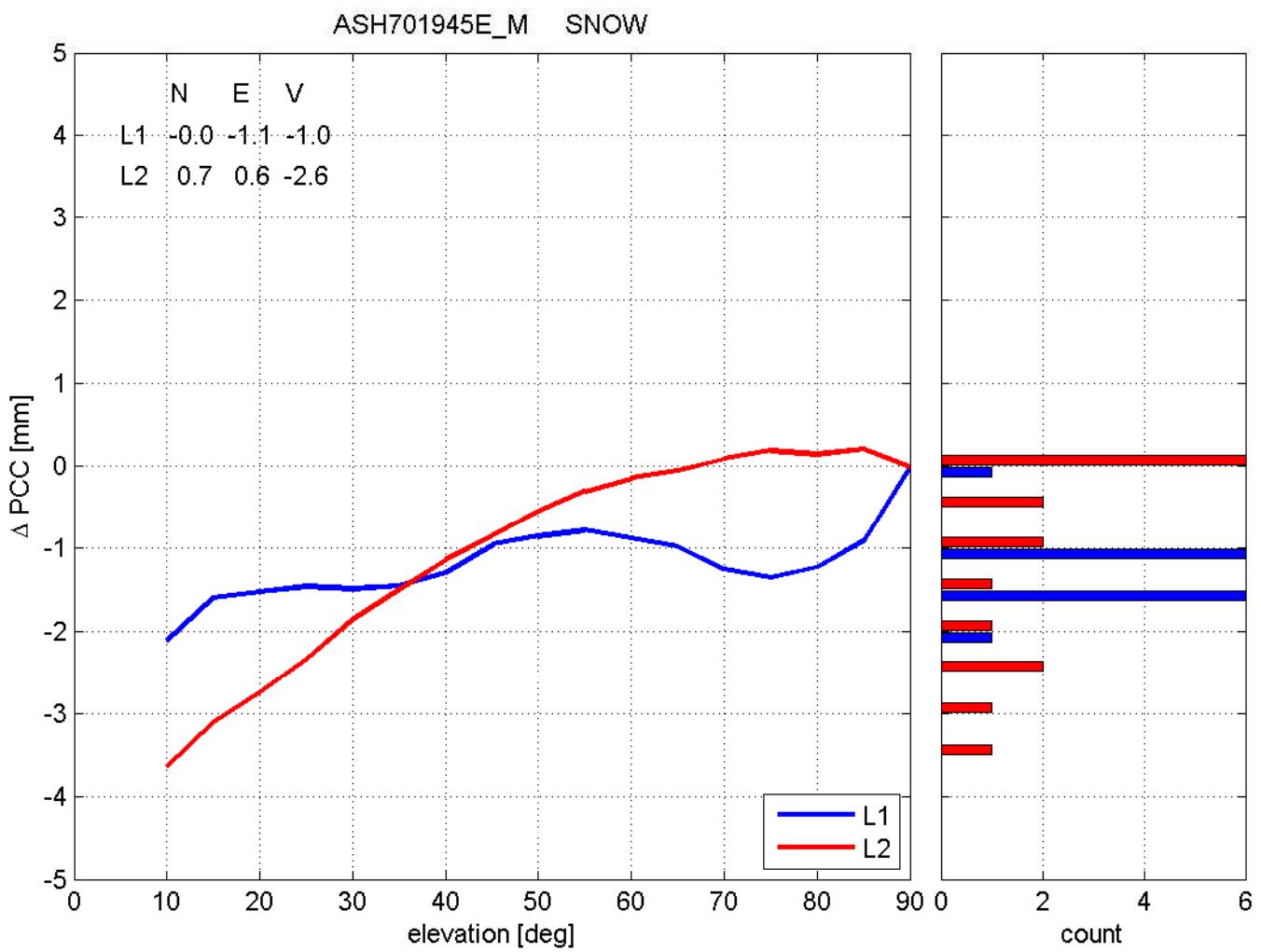
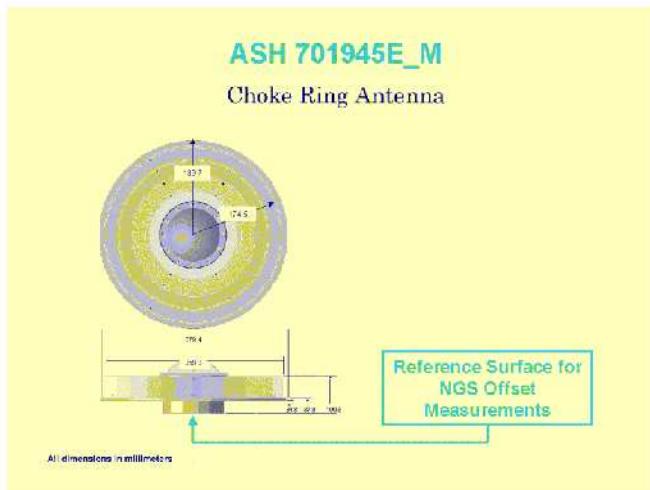
### ASH 701945E\_M

Choke Ring Antenna



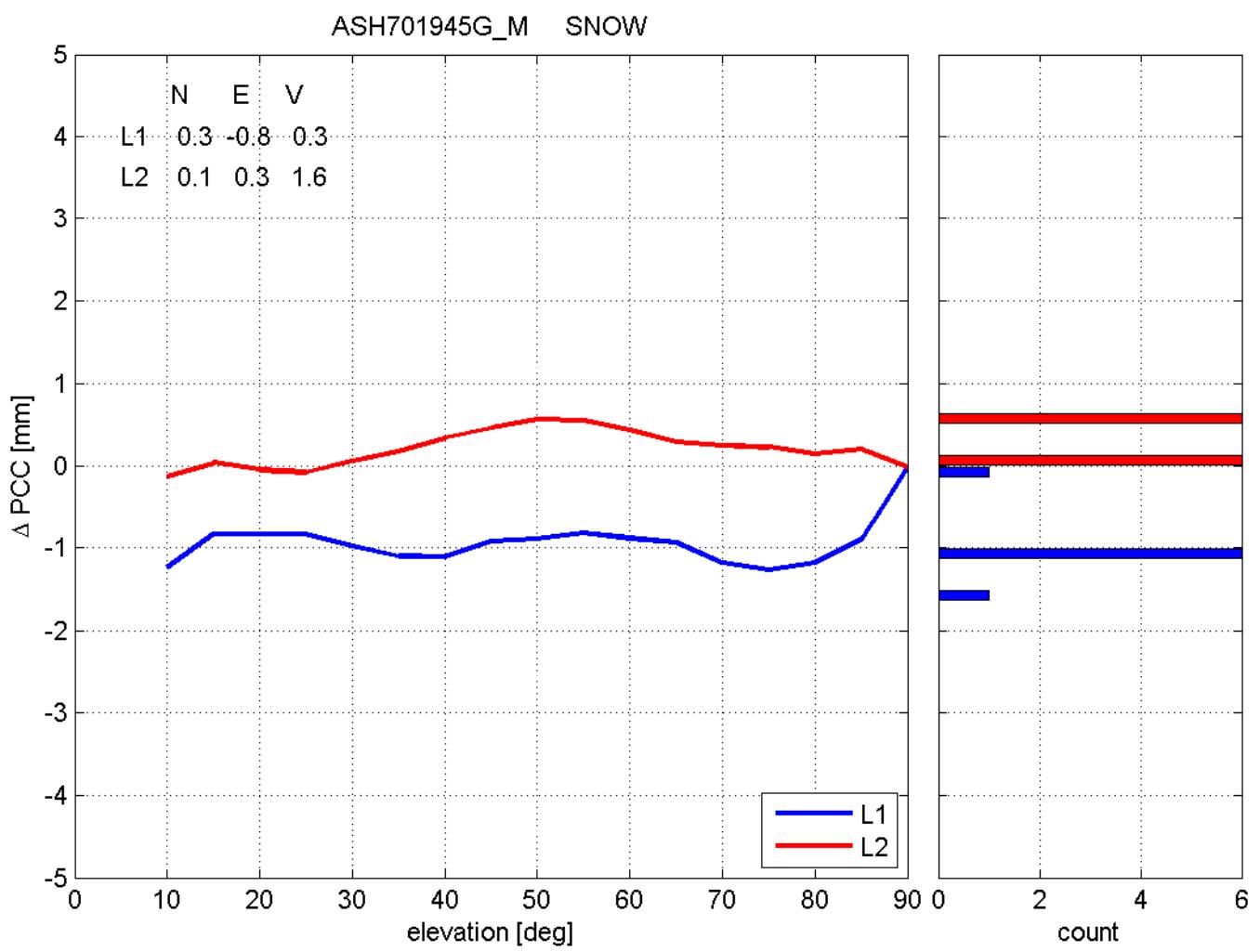
calib date:  
17-Mar-2003

chokering (CR)



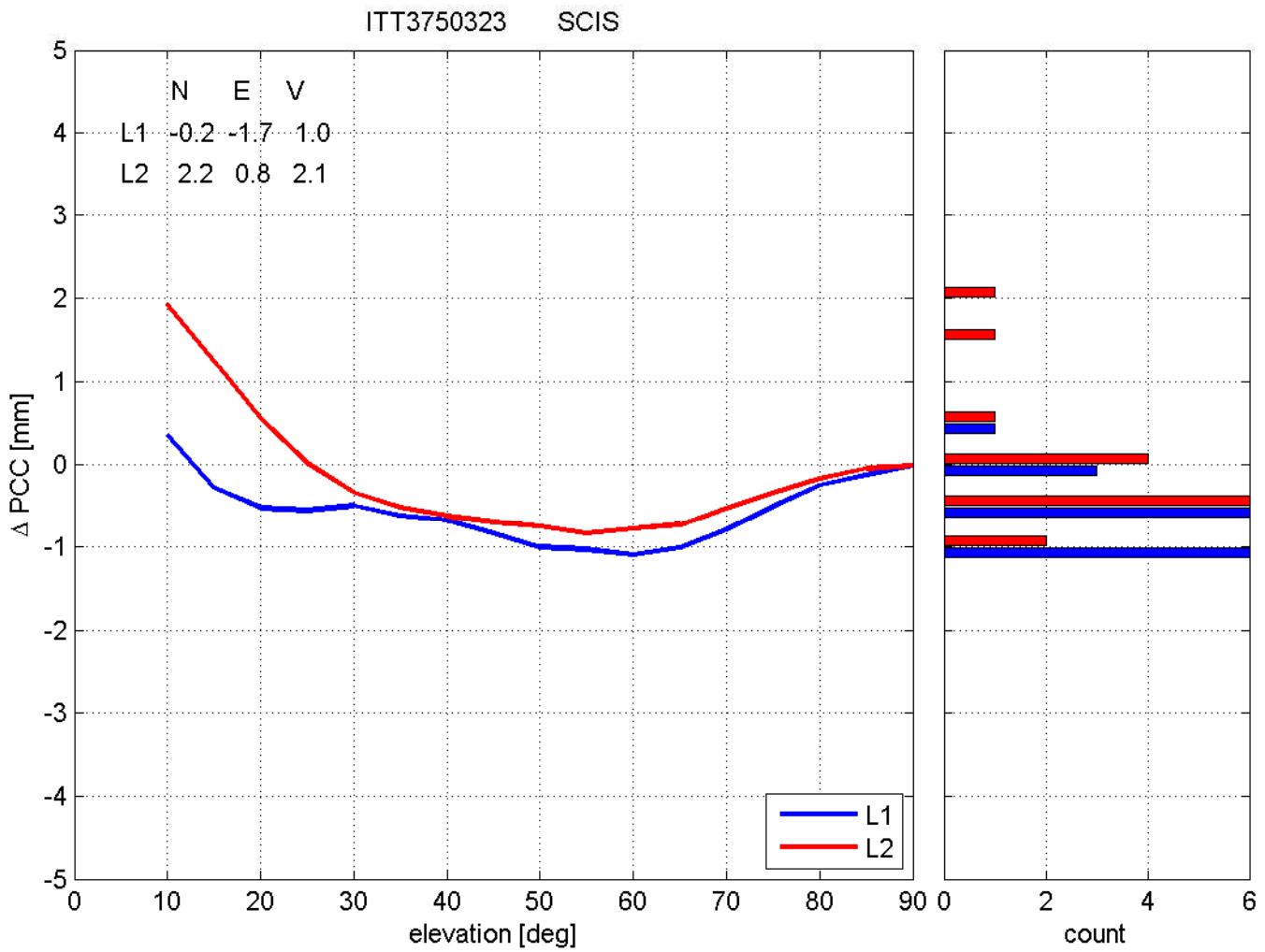
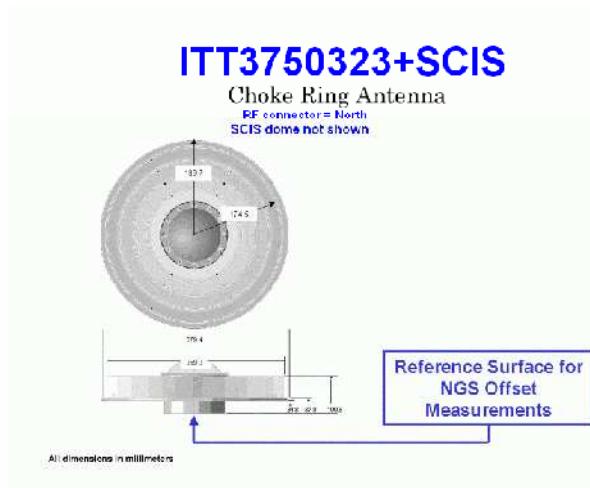
calib date:  
17-Mar-2003

chokering (CR)



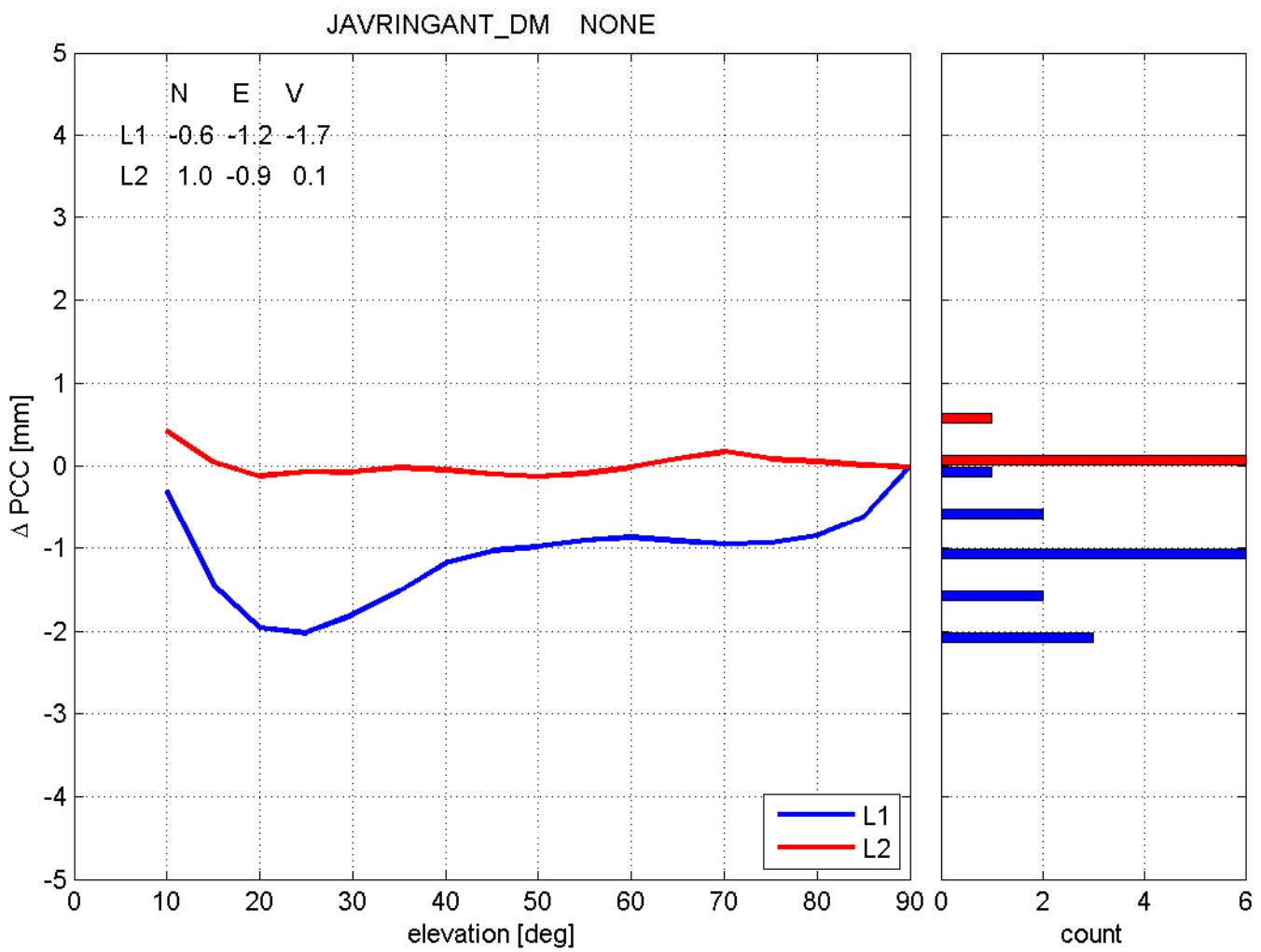
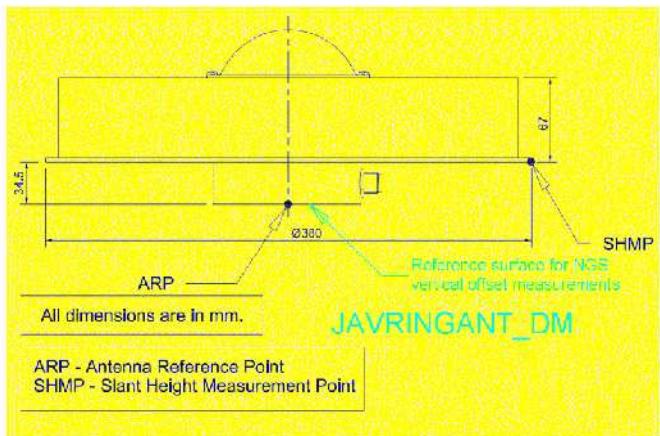
calib date:  
09-Dec-2011

chokering (CR)



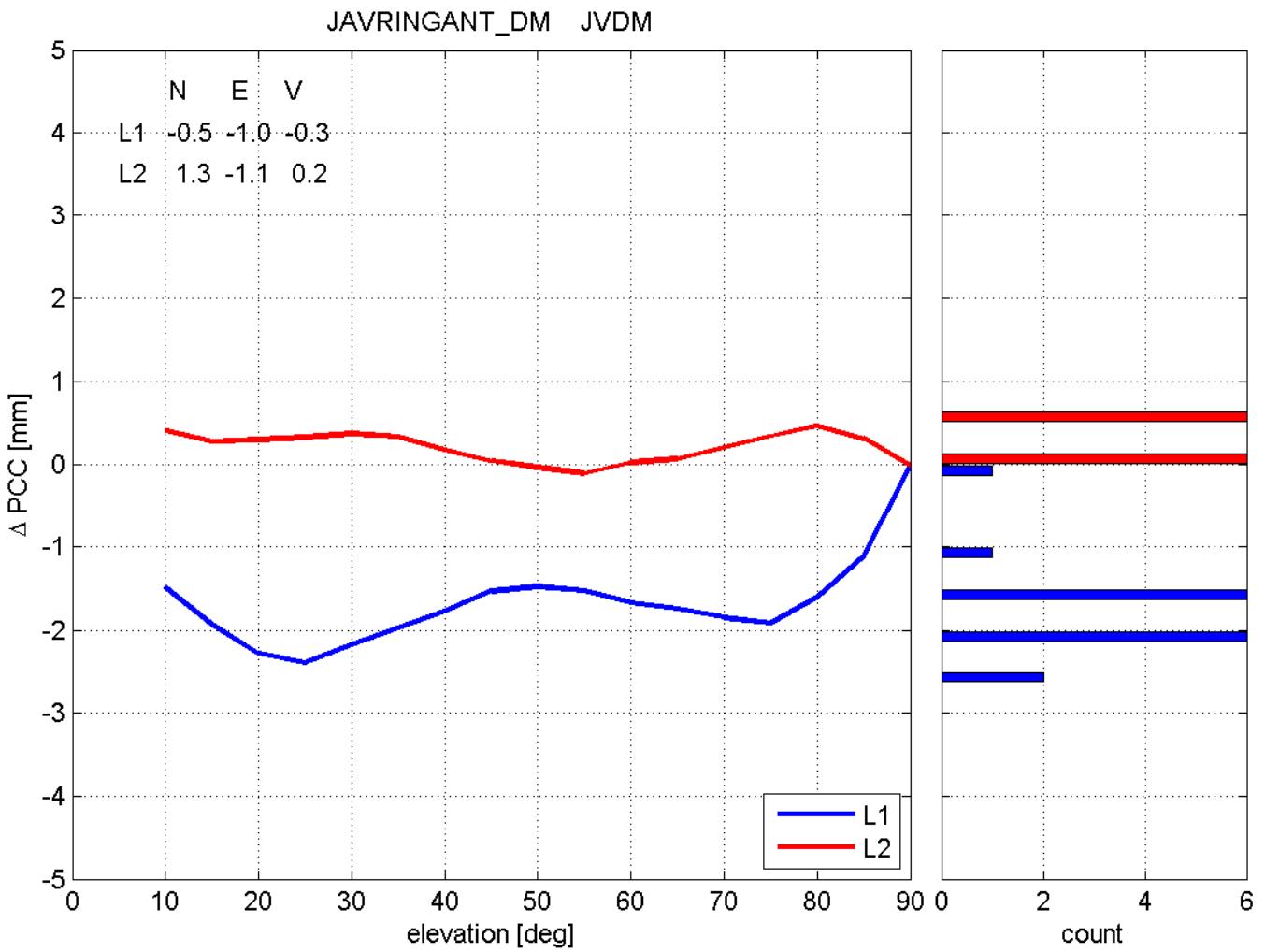
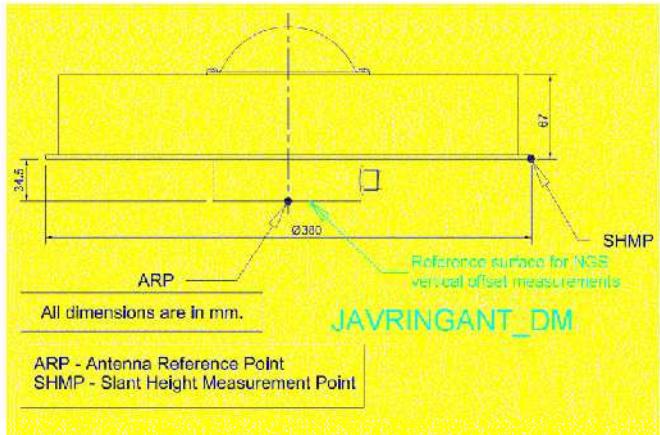
calib date:  
16-Sep-2009

chokering (CR)



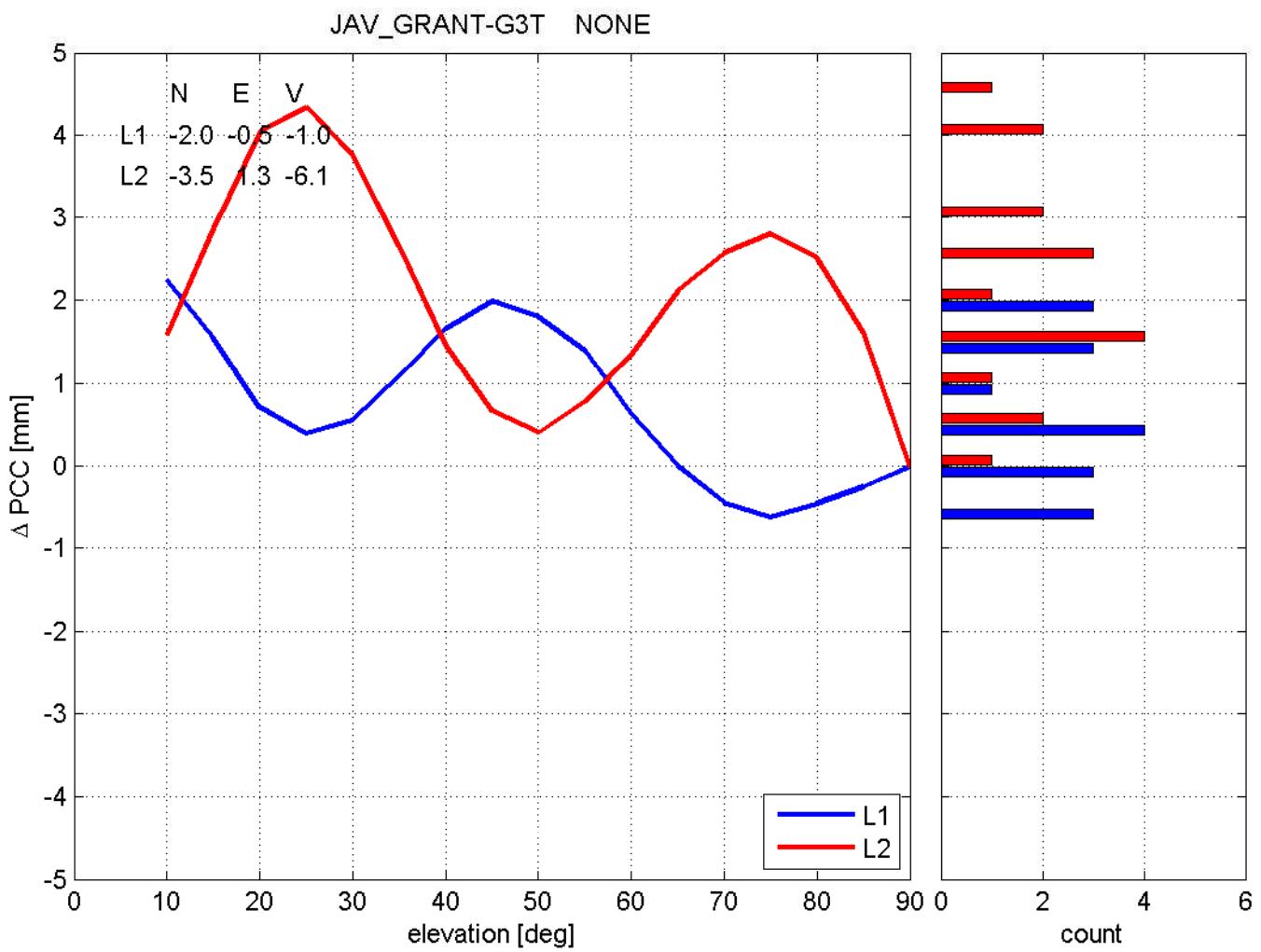
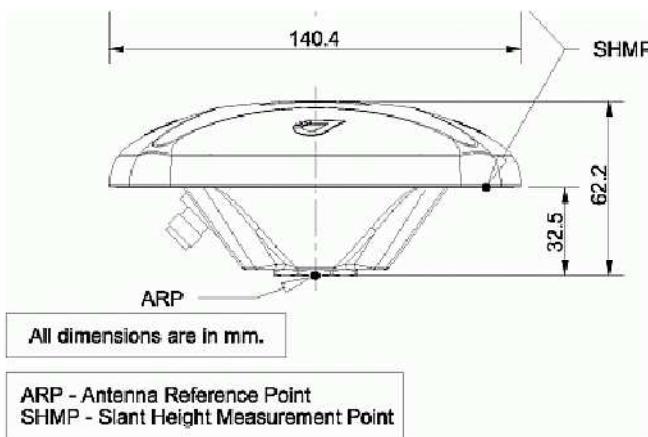
calib date:  
13-Nov-2009

chokering (CR)



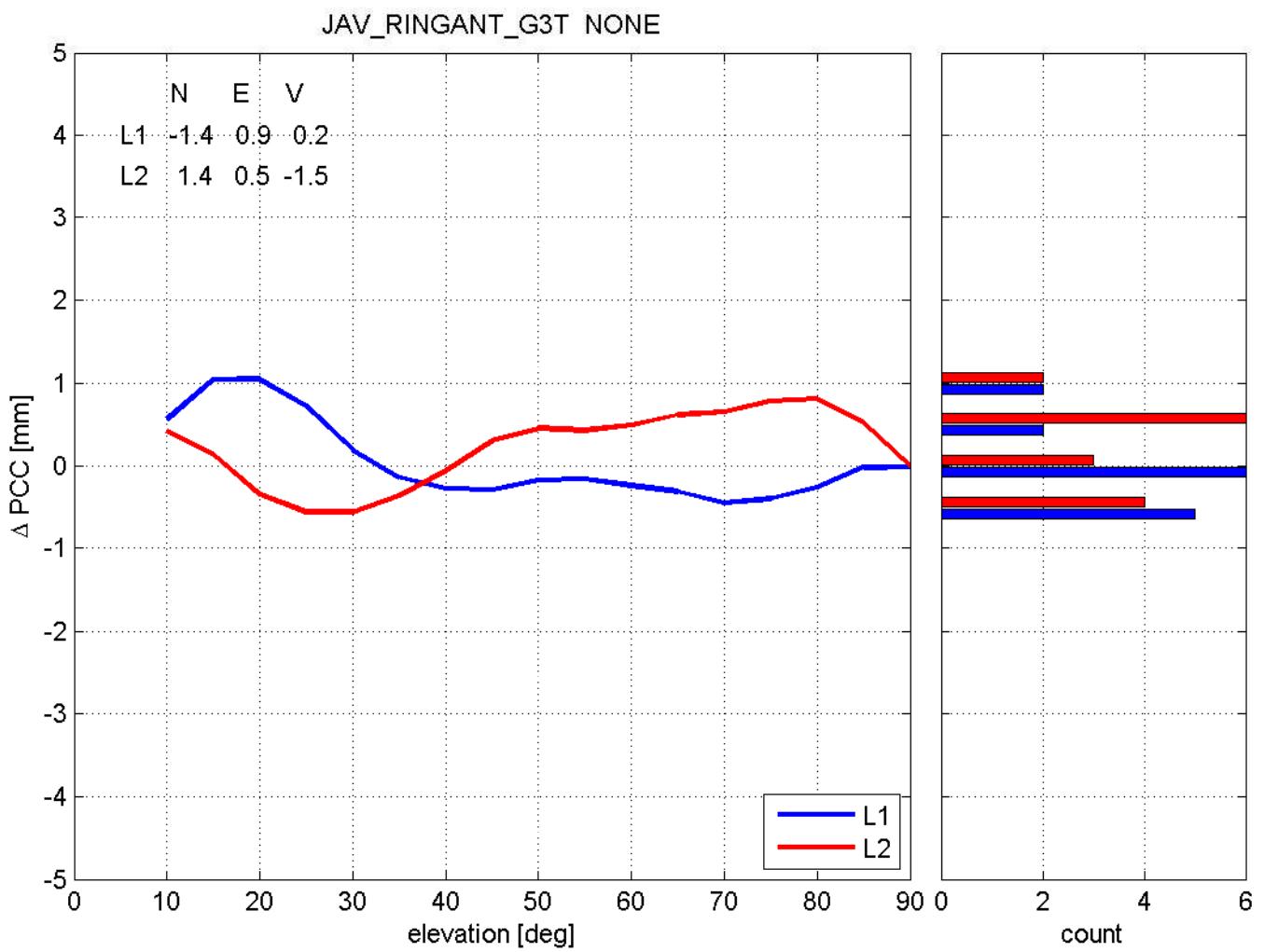
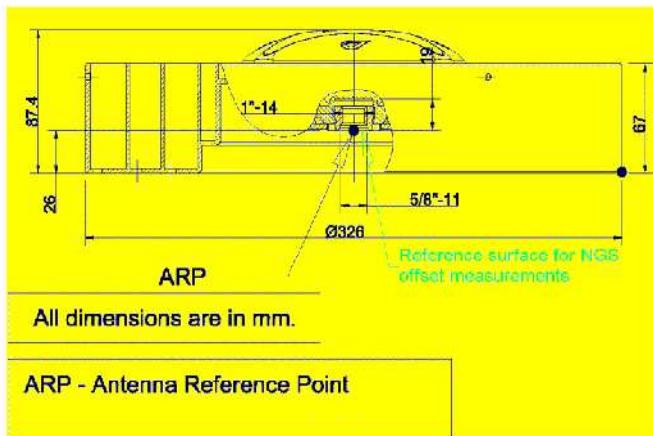
calib date:  
28-Jun-2008

rover antenna (no  
rx)



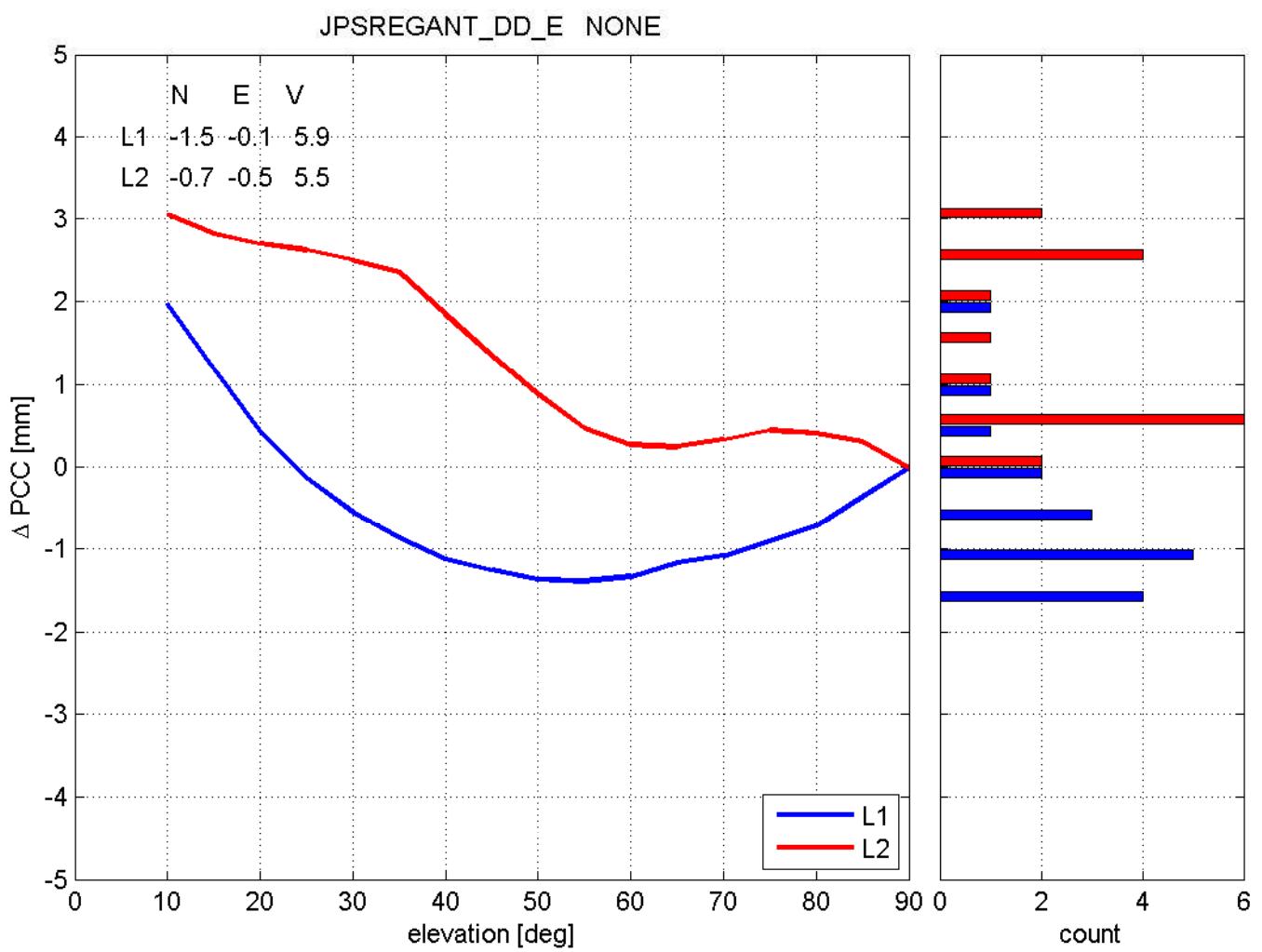
calib date:  
09-Jan-2009

chokering (CR)



calib date:  
07-Apr-1999

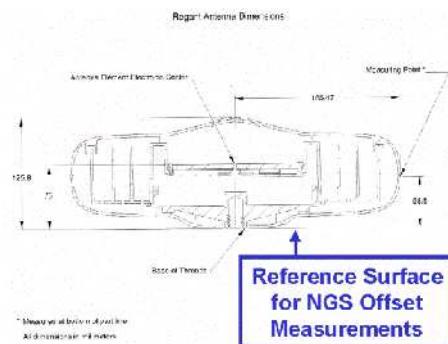
non-standard  
chokering



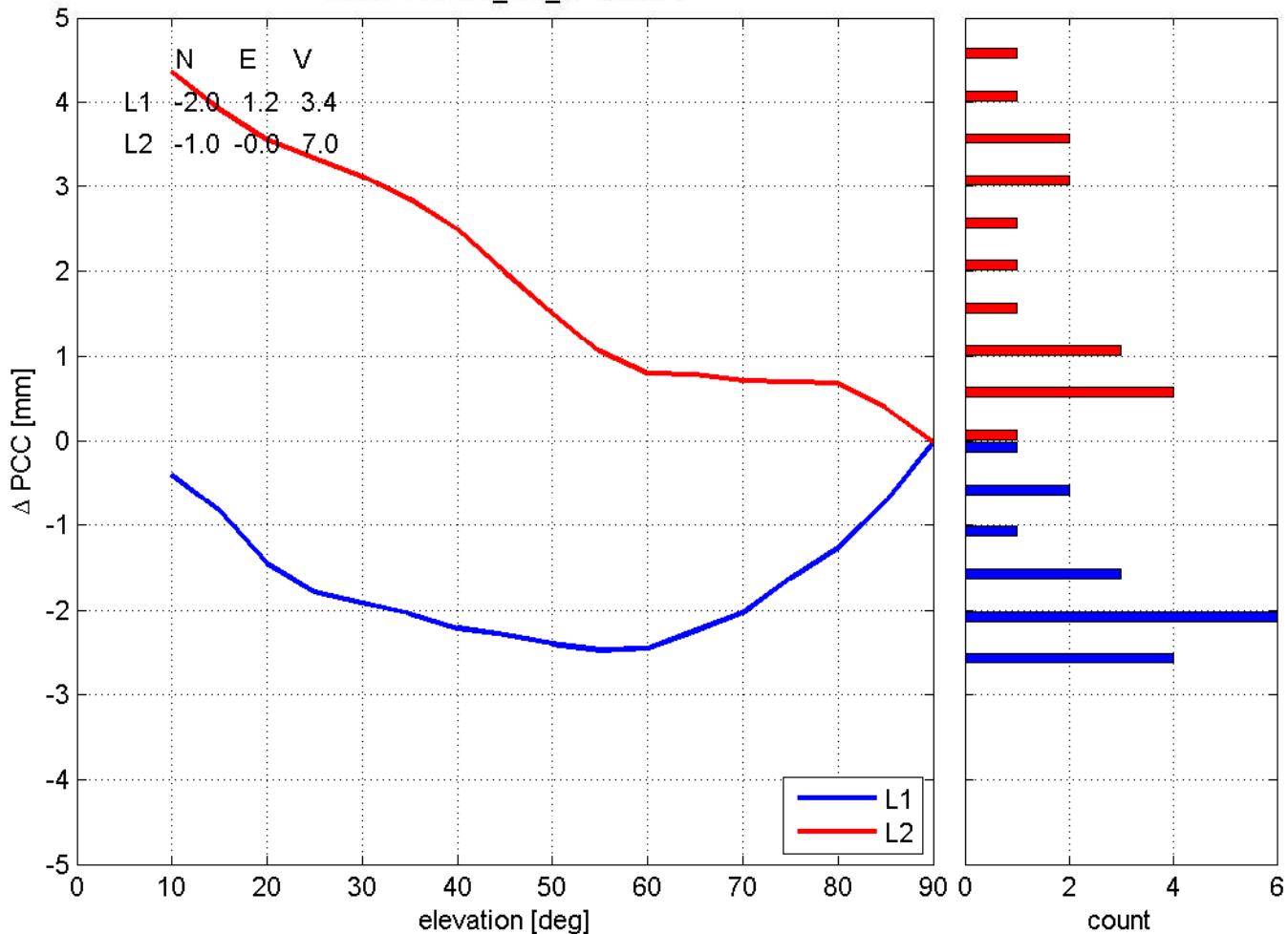
calib date:  
05-Feb-1999

non-standard  
chokering

### JPSREGANT\_SD\_E

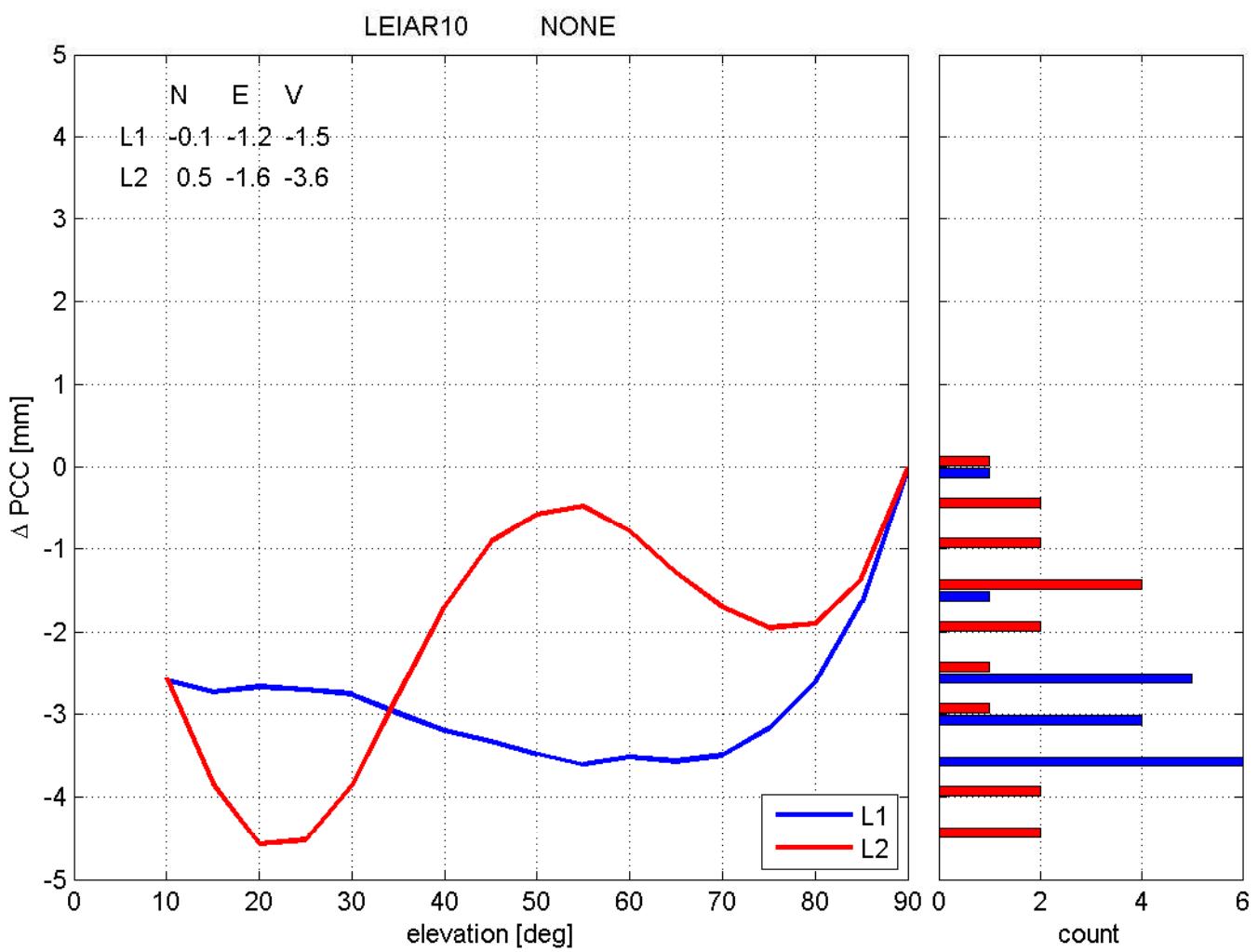
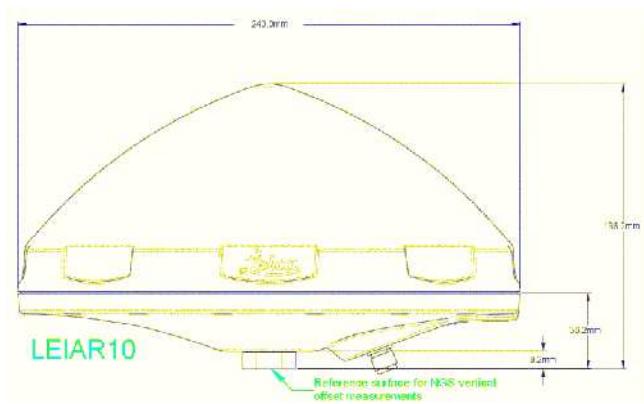


### JPSREGANT\_SD\_E NONE



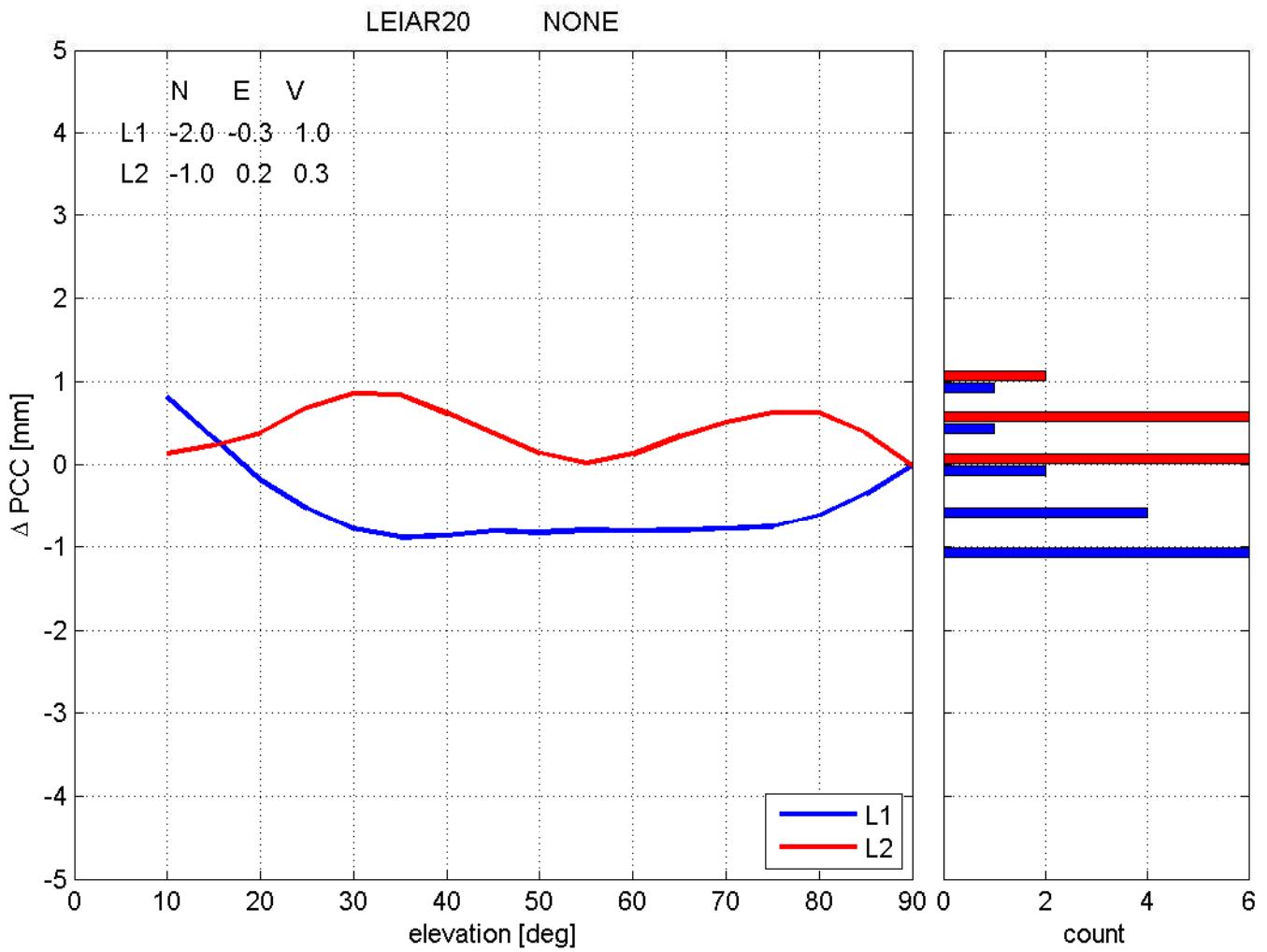
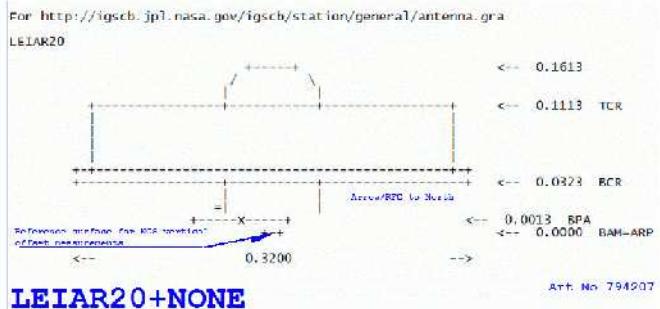
calib date:  
26-Mar-2010

geodetic with  
large groundplane



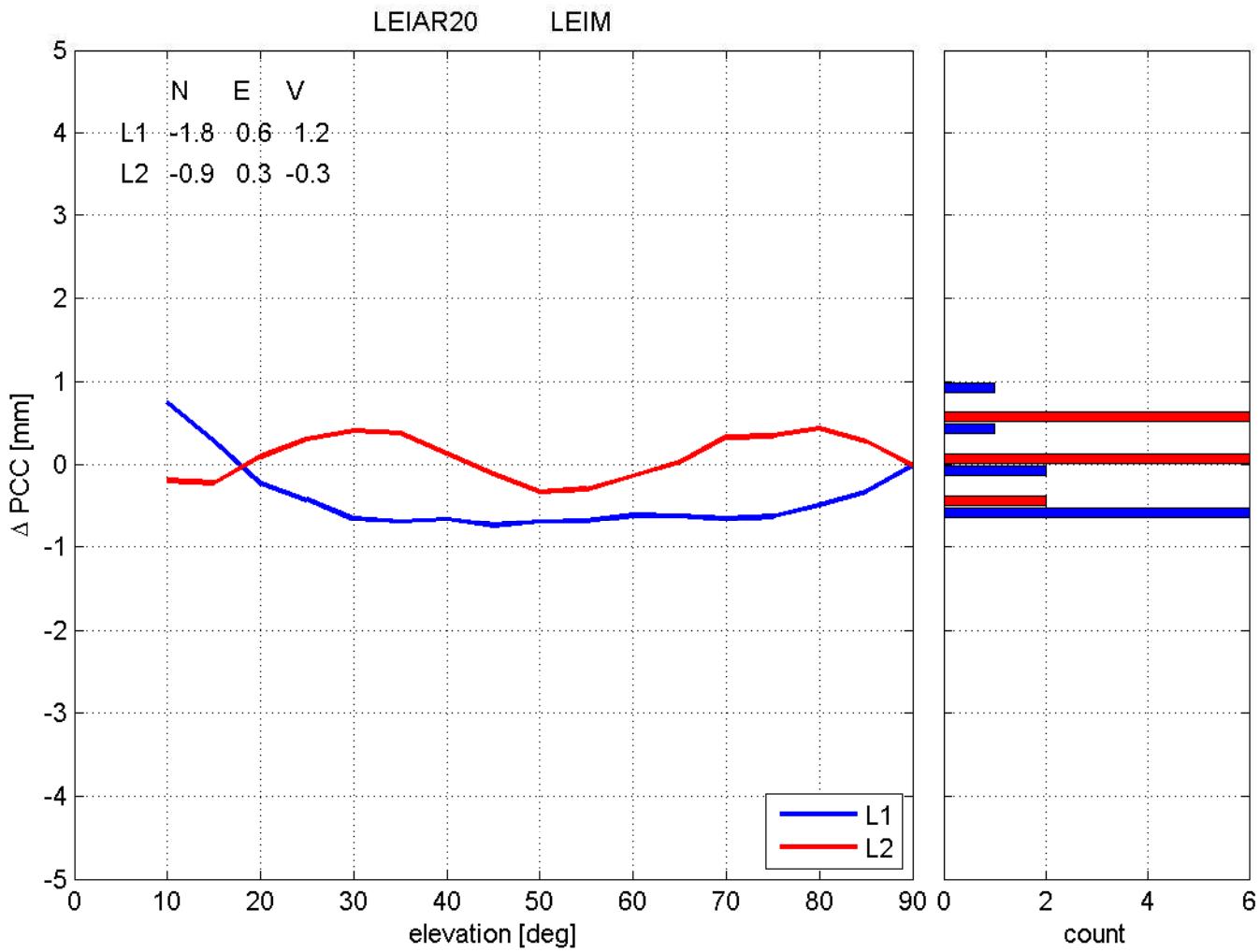
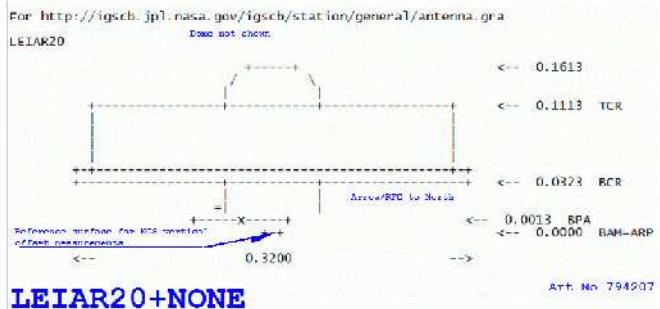
calib date:  
07-Dec-2012

chokering (CR)



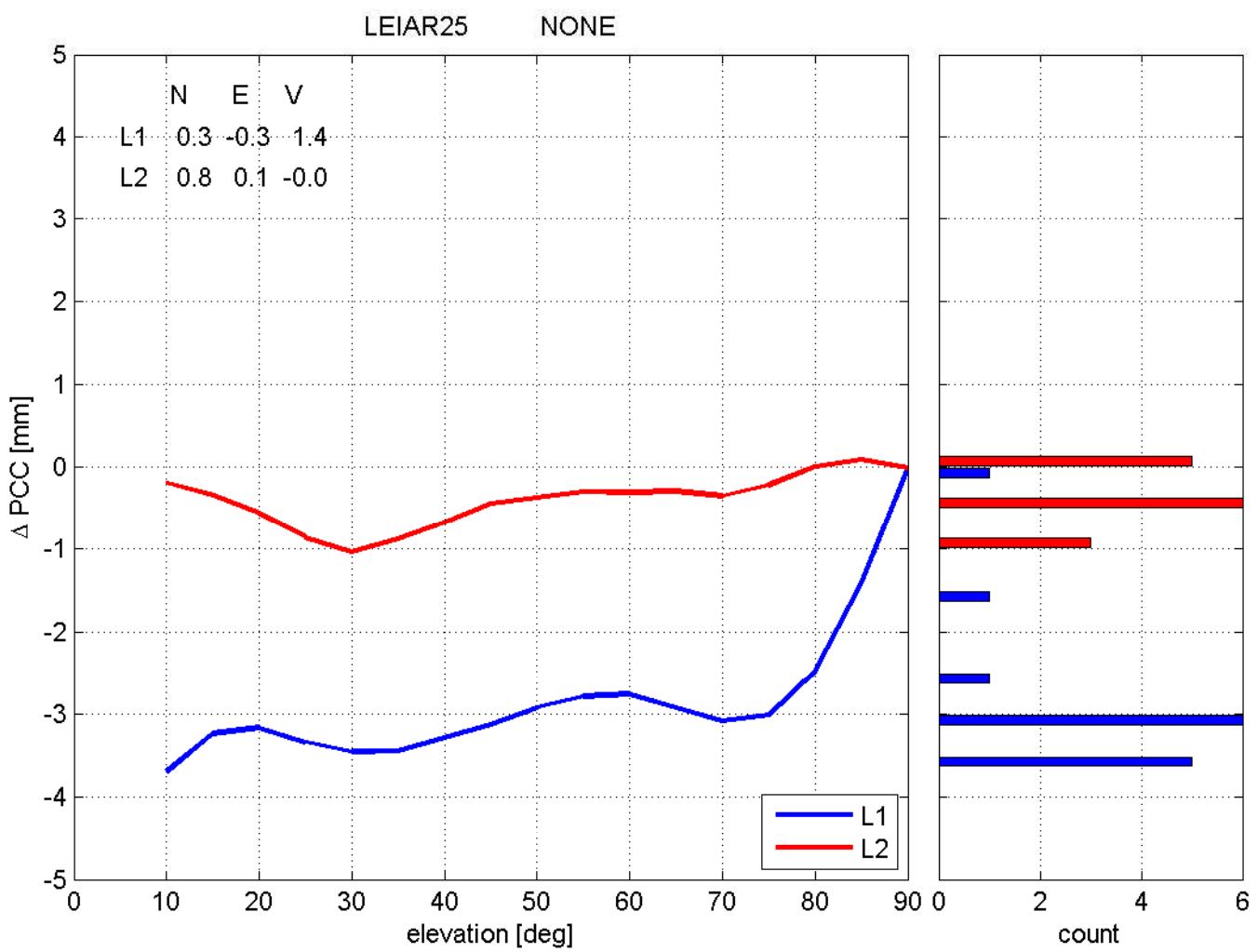
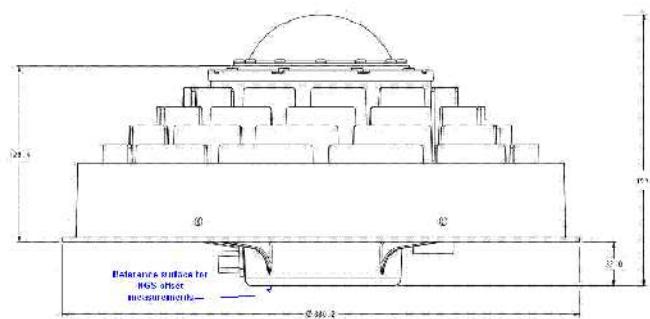
calib date:  
14-Dec-2012

chokering (CR)



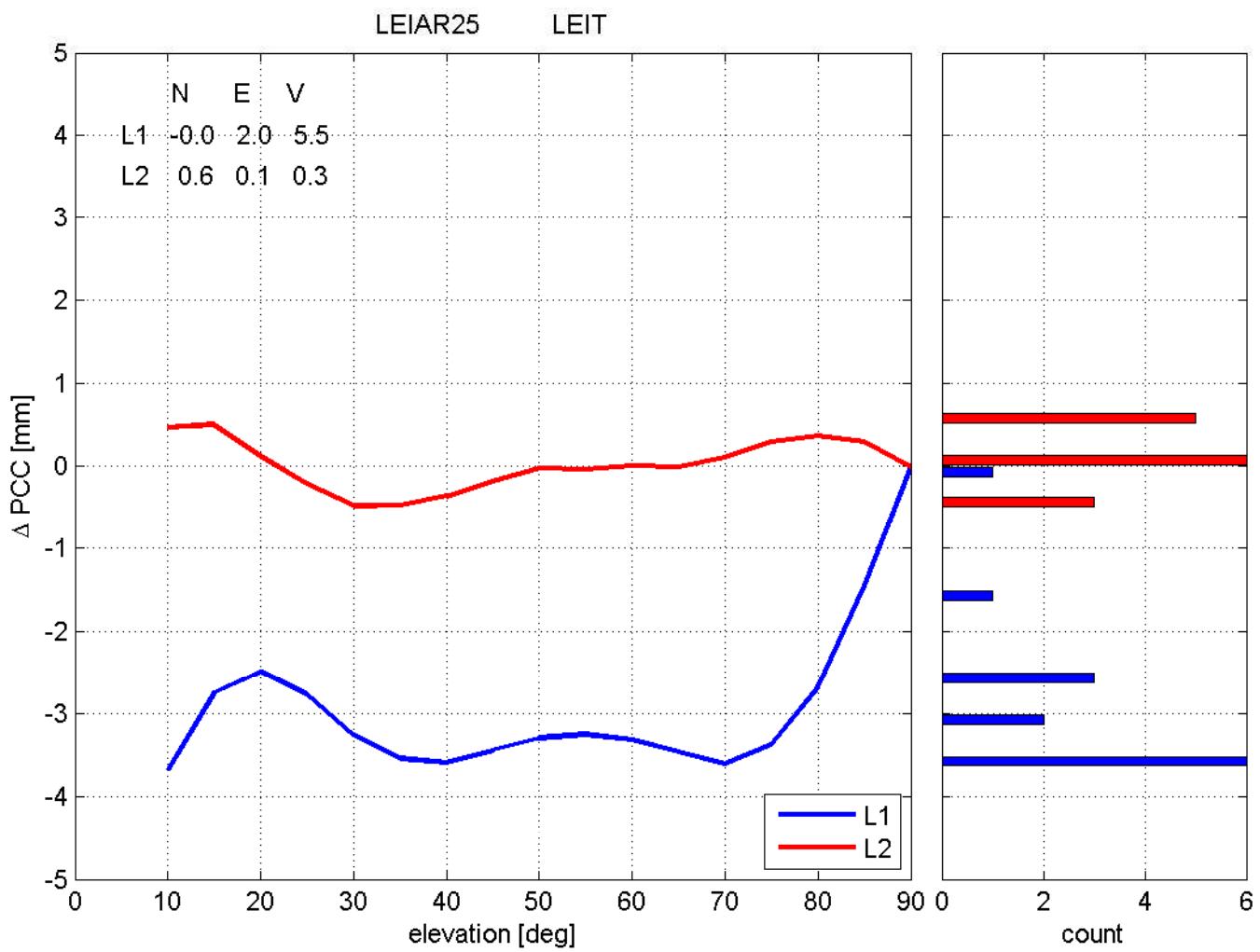
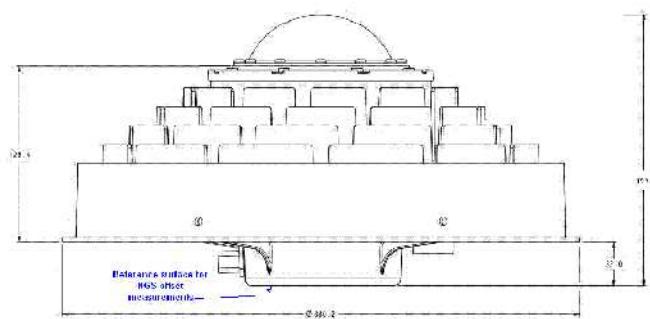
calib date:  
05-Mar-2009

non-standard  
chokering



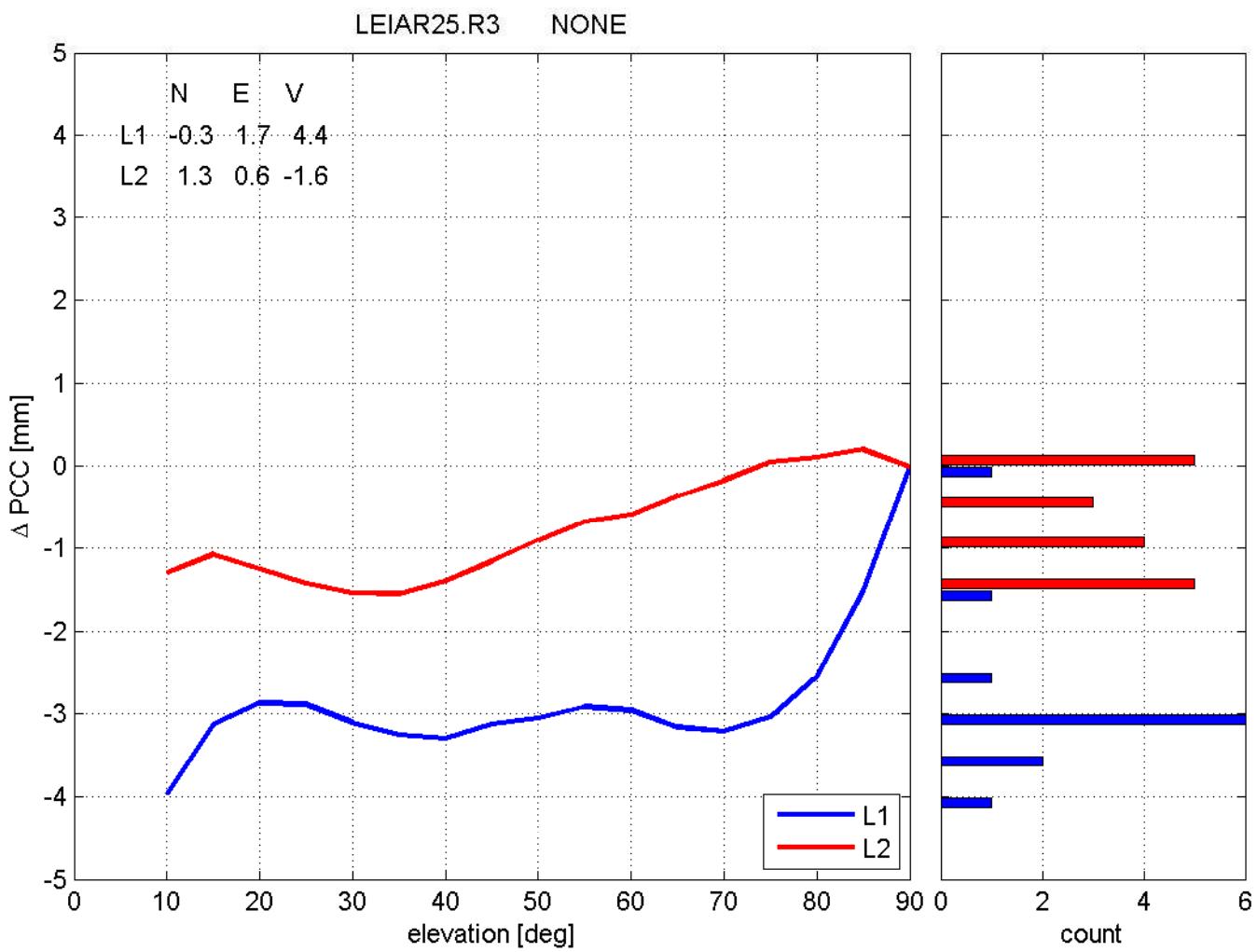
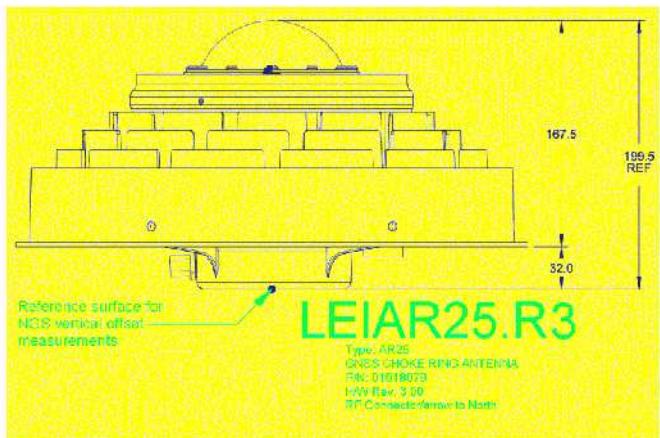
calib date:  
19-Mar-2009

non-standard  
chokering



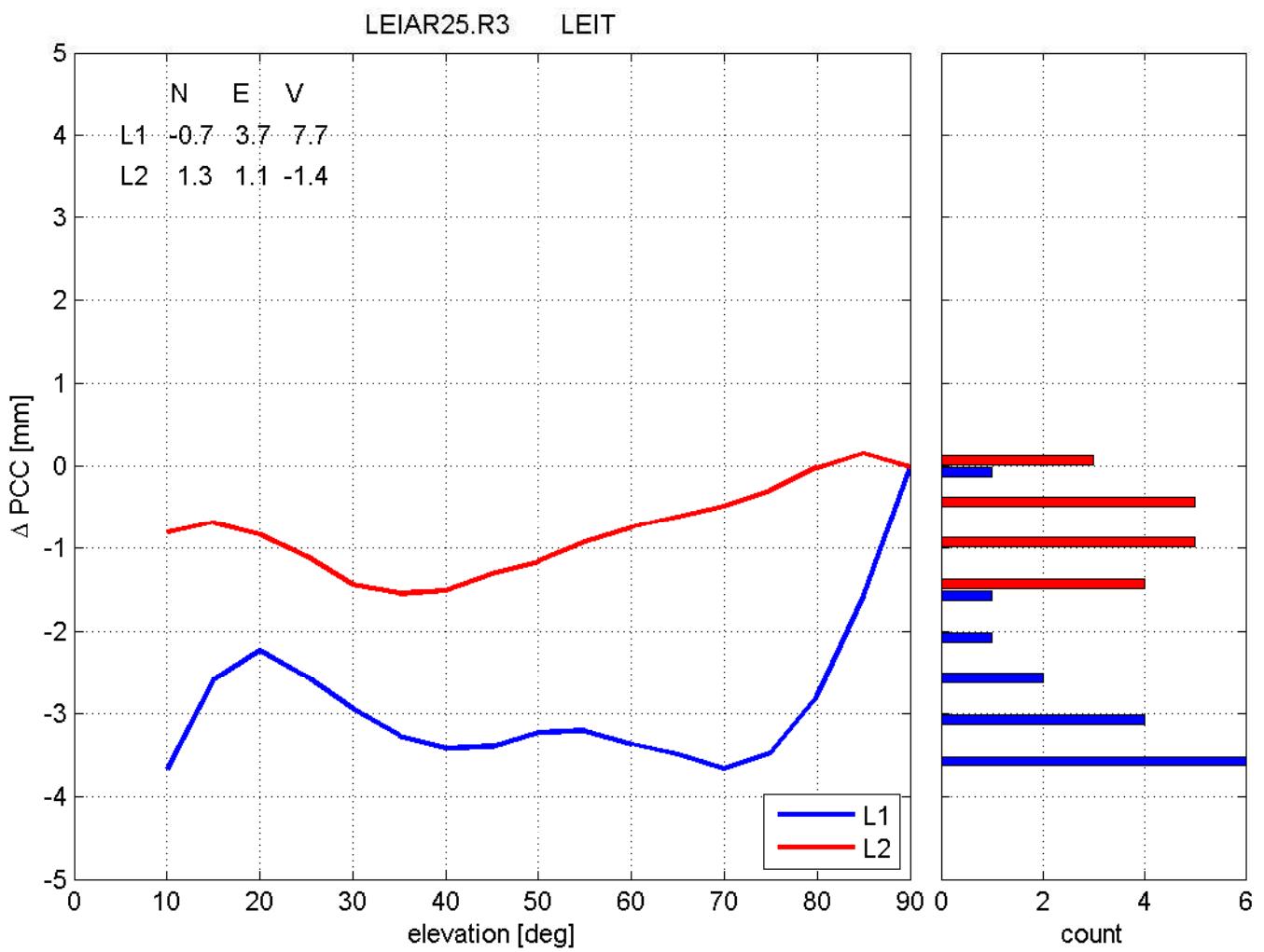
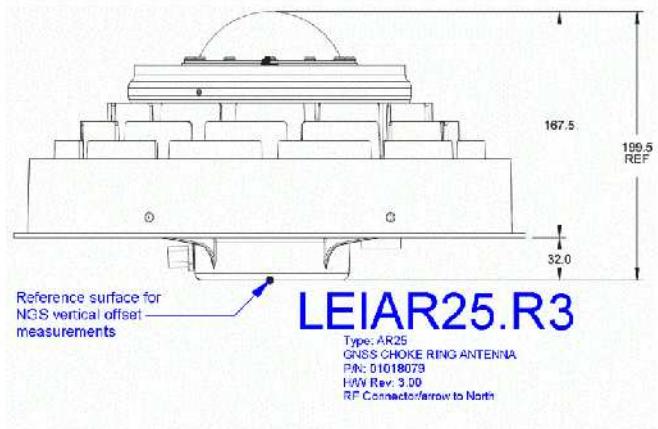
calib date:  
22-Nov-2010

non-standard  
chokering



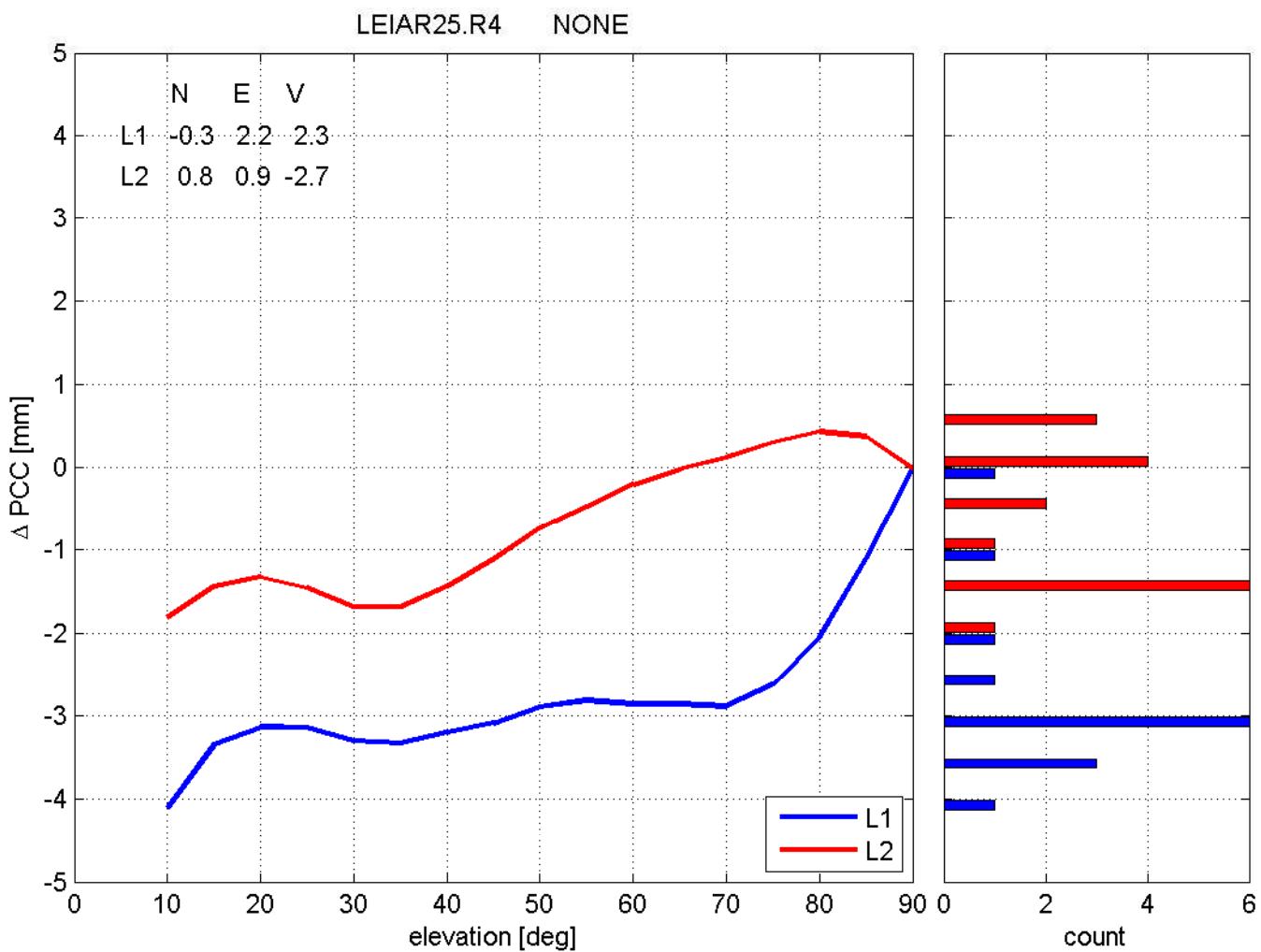
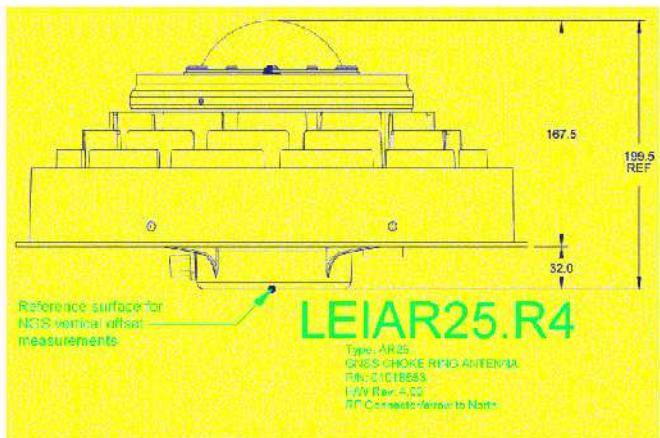
calib date:  
22-Nov-2010

non-standard  
chokering



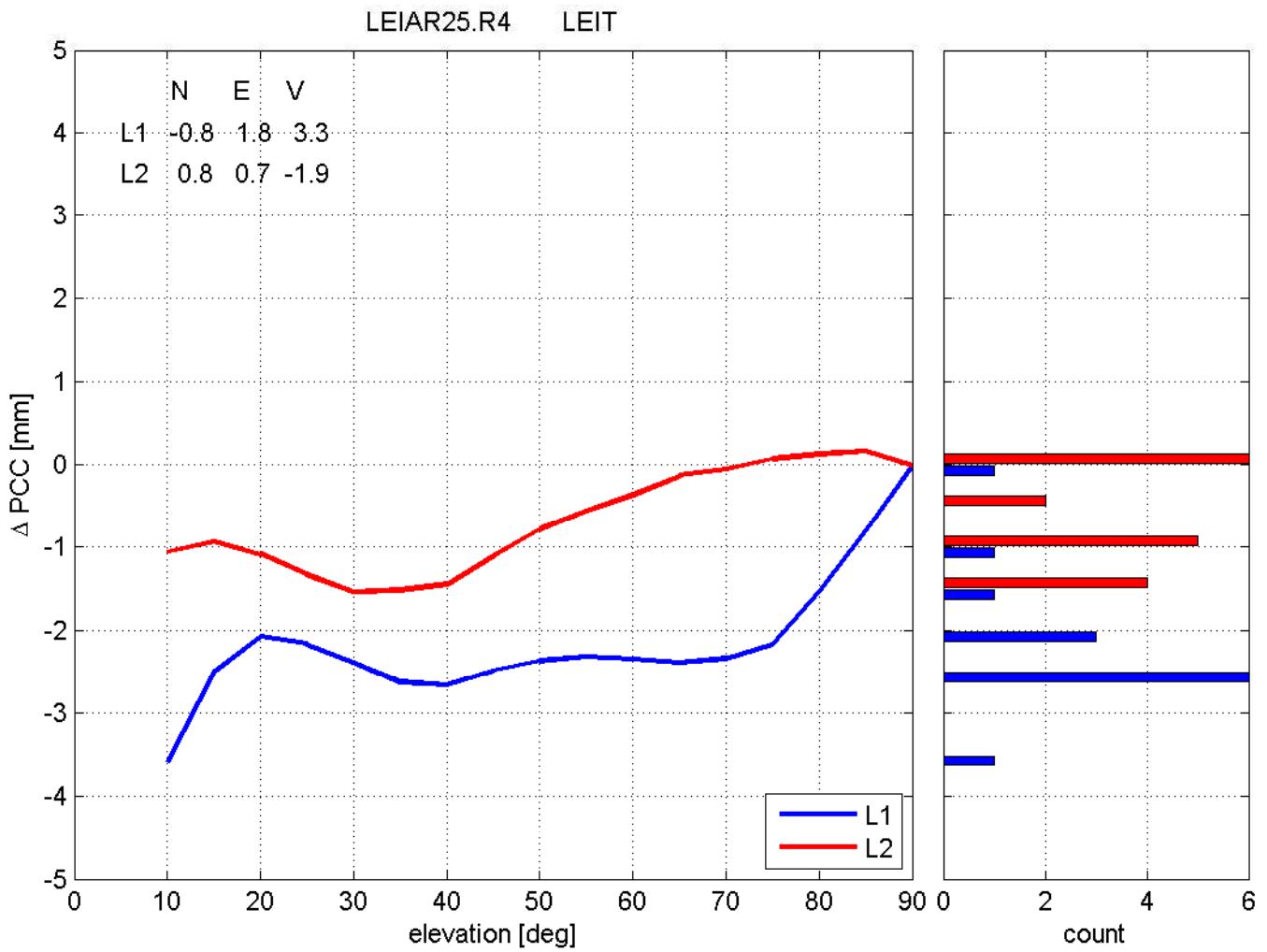
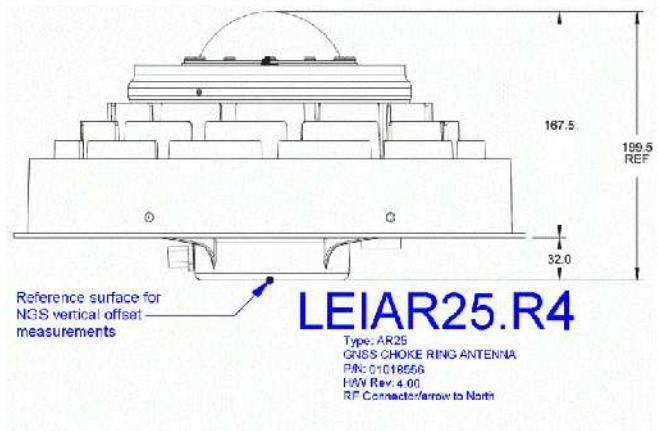
calib date:  
16-Nov-2010

non-standard  
chokering



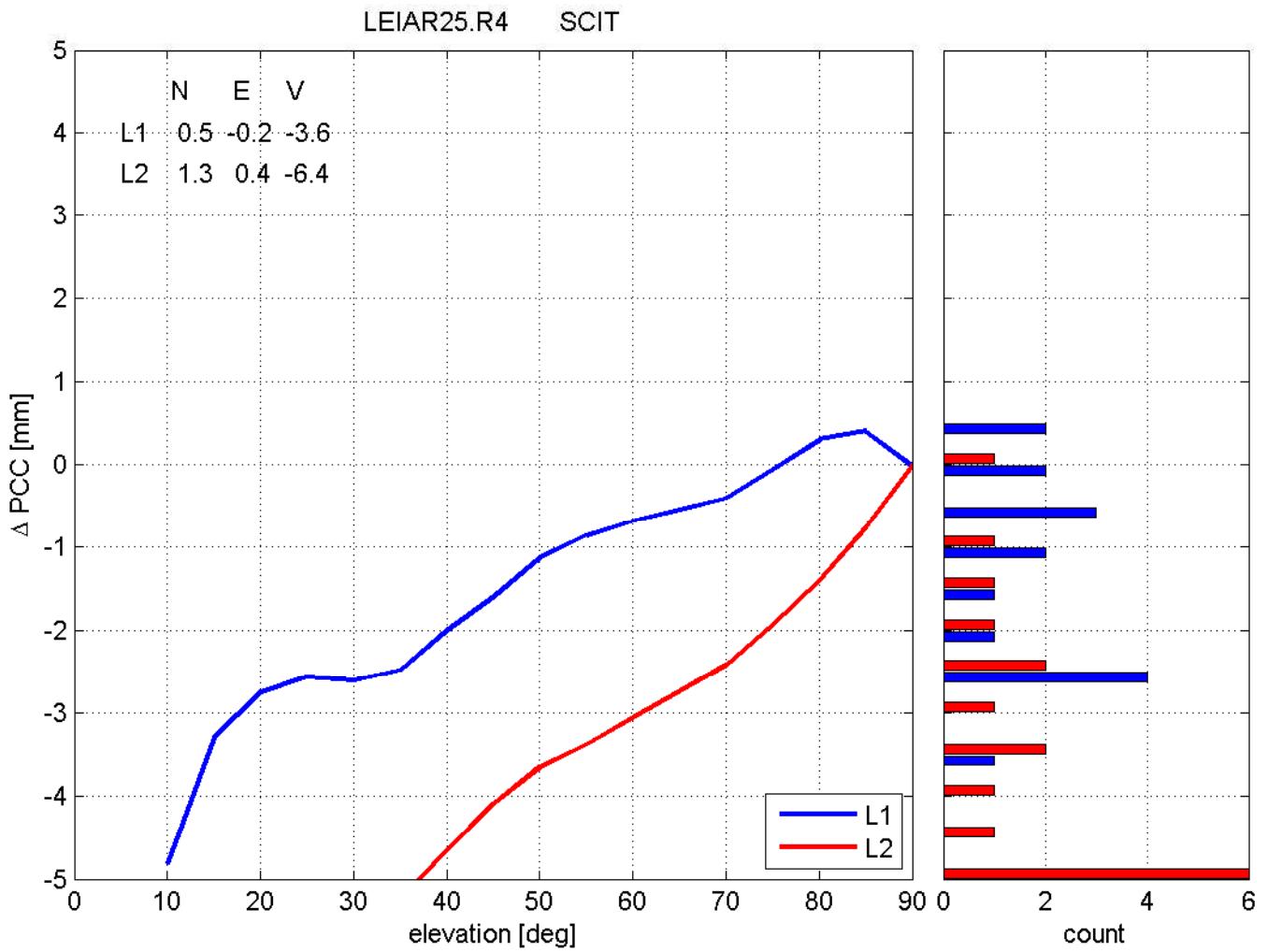
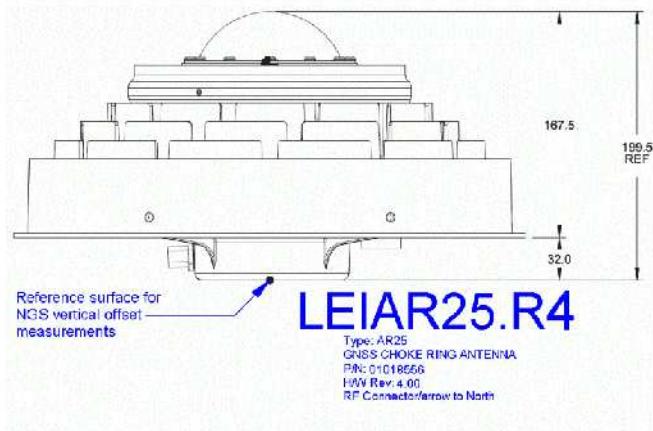
calib date:  
16-Nov-2010

non-standard  
chokering



calib date:  
18-Feb-2011

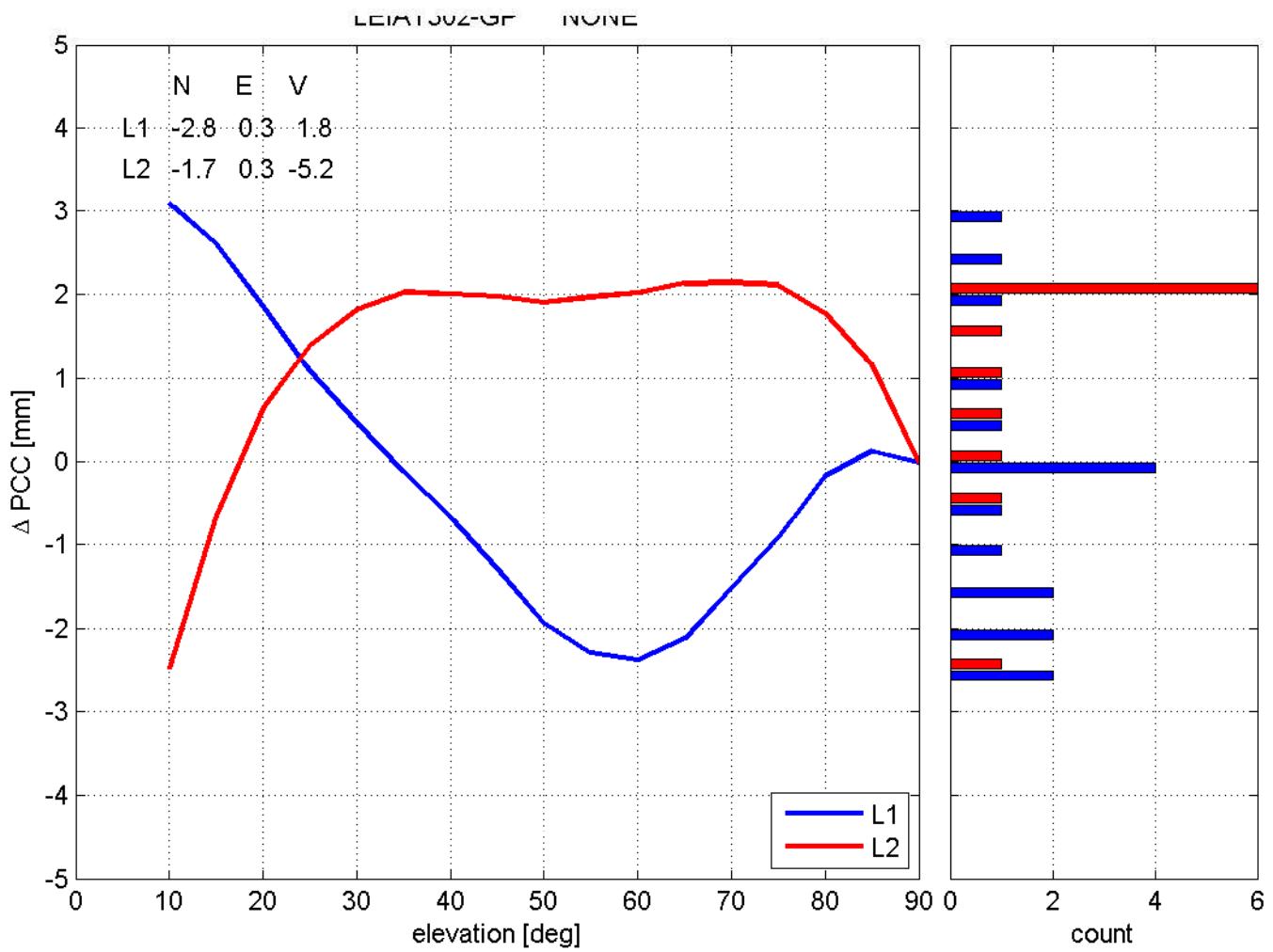
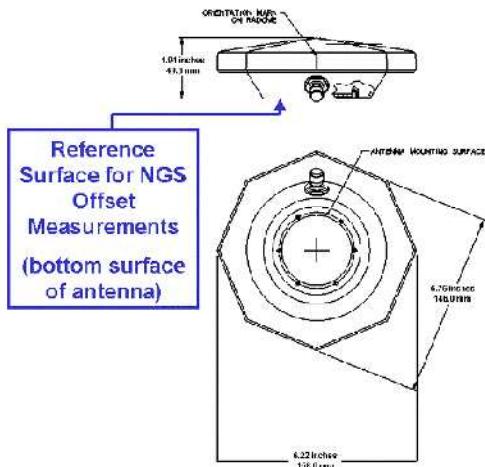
non-standard  
chokering



calib date:  
01-Jun-1998

patch without  
groundplane  
(-GP)

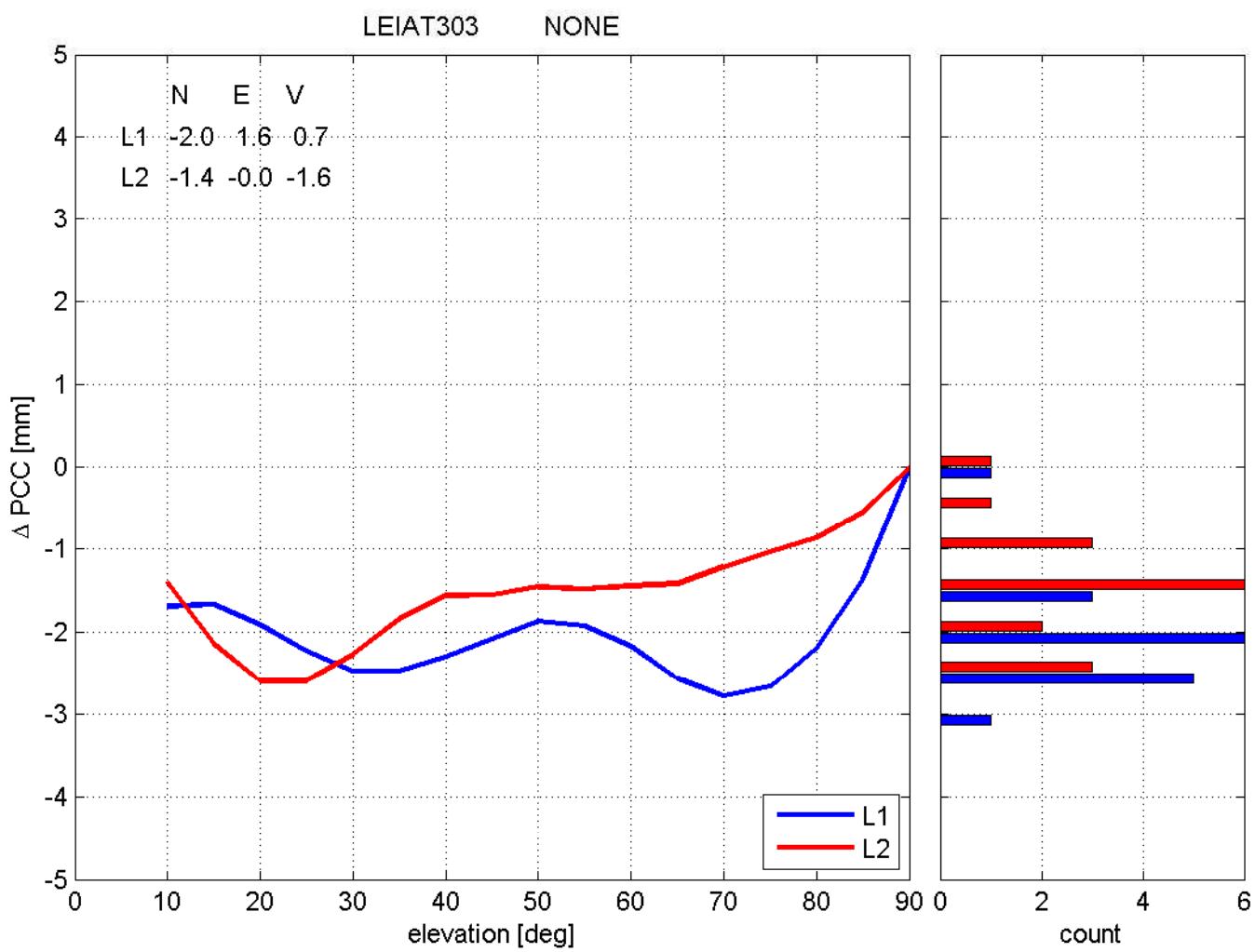
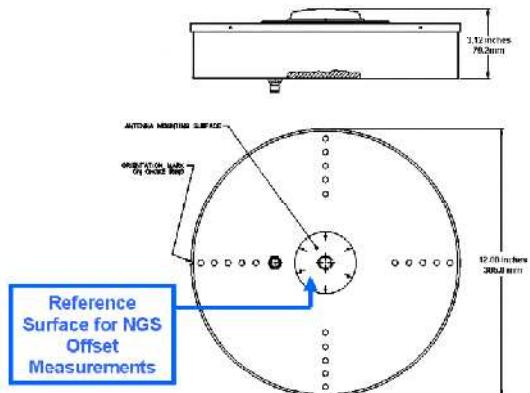
LEI AT202 & LEI AT302  
(without groundplane)



calib date:  
22-Jul-1998

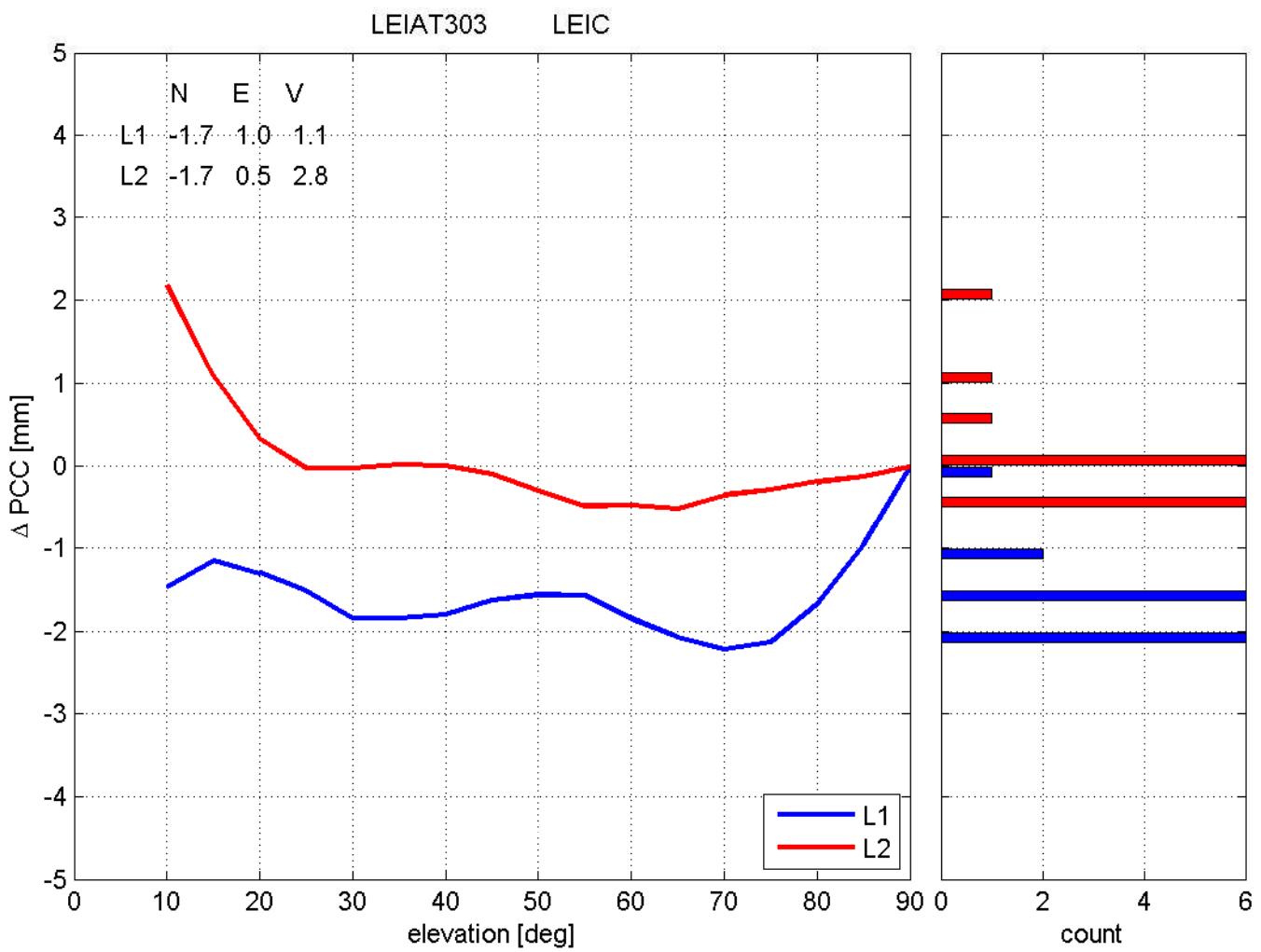
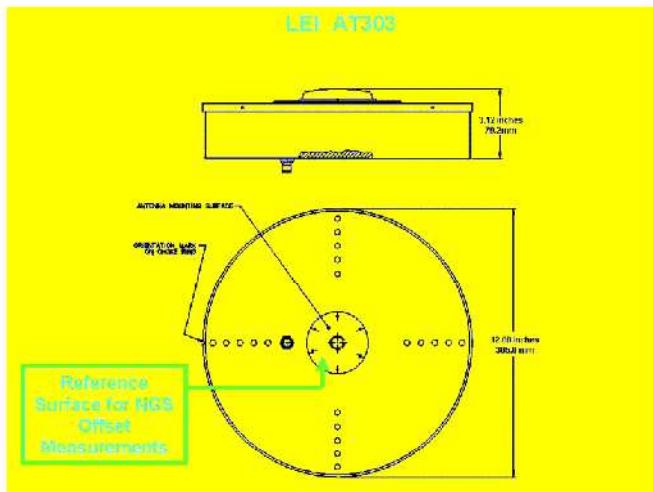
chokering (CR)

LEI AT303



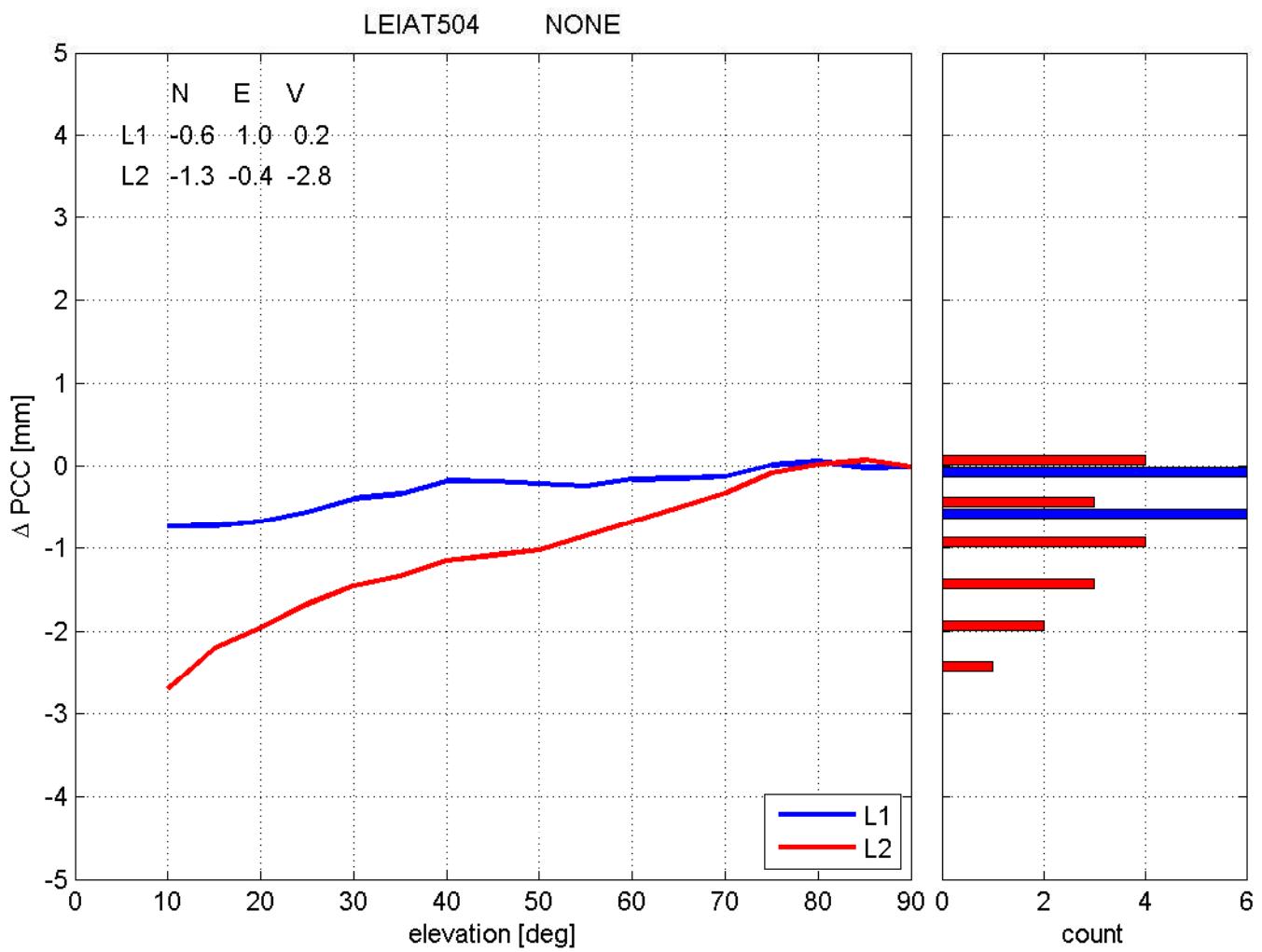
calib date:  
22-Jul-1998

chokering (CR)



calib date:  
05-Feb-1999

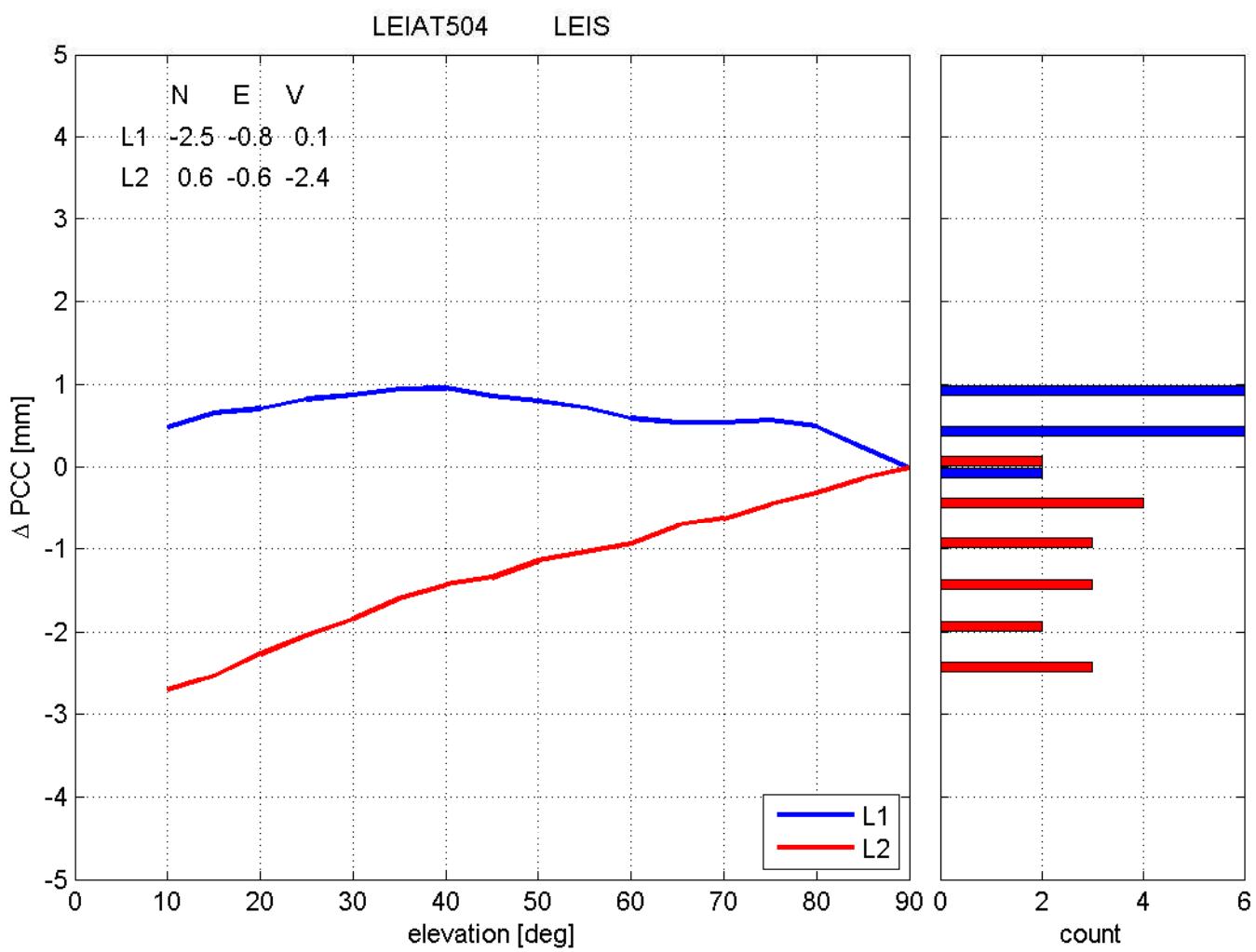
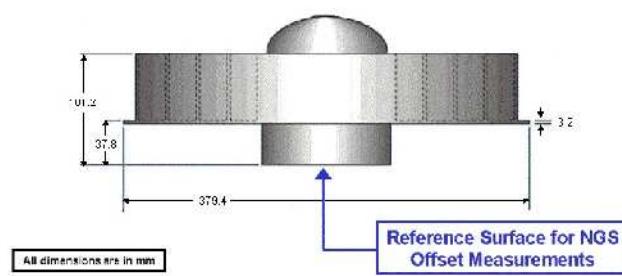
chokering (CR)



calib date:  
07-Jan-2004

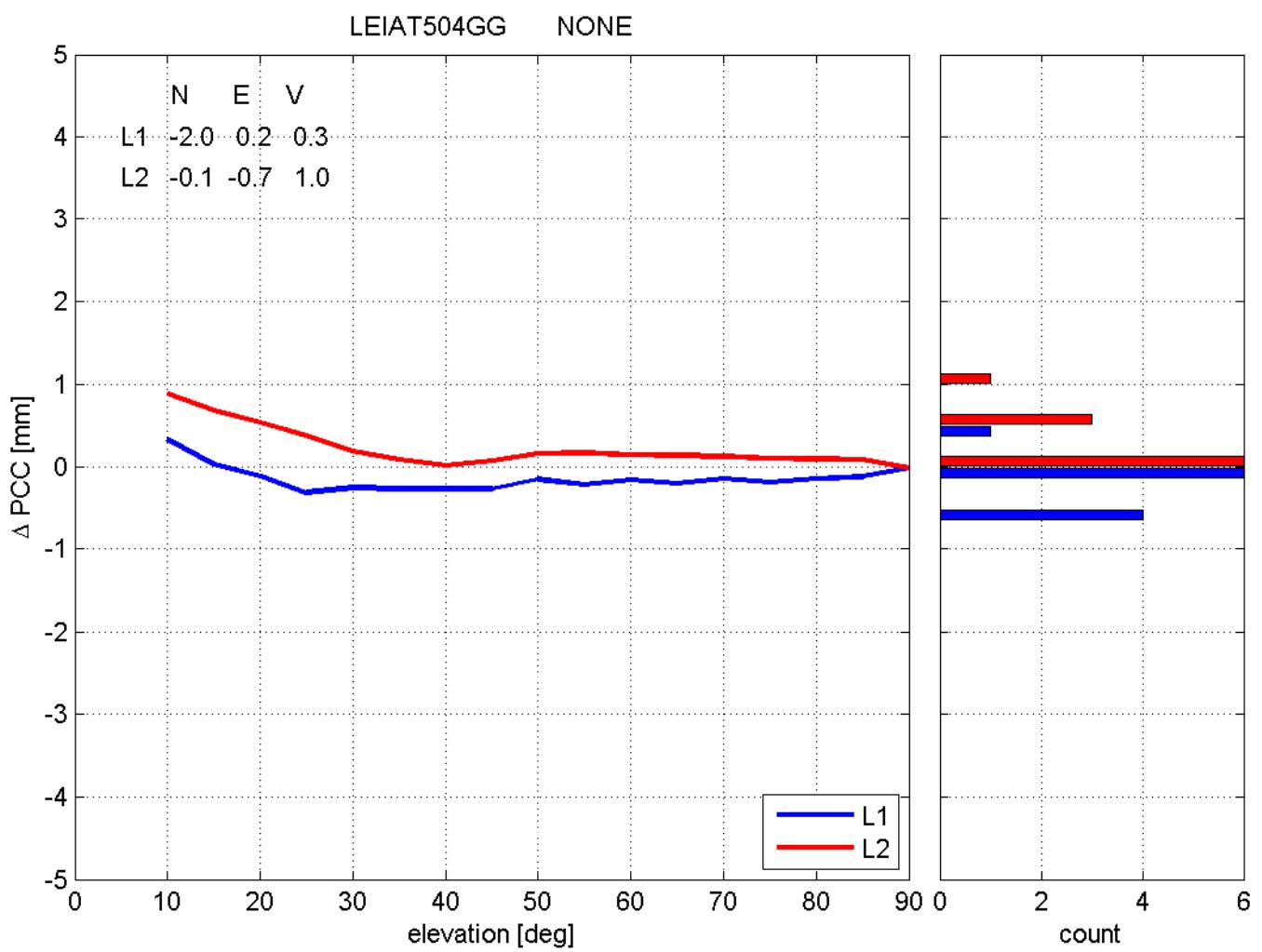
chokering (CR)

## LEI AT504



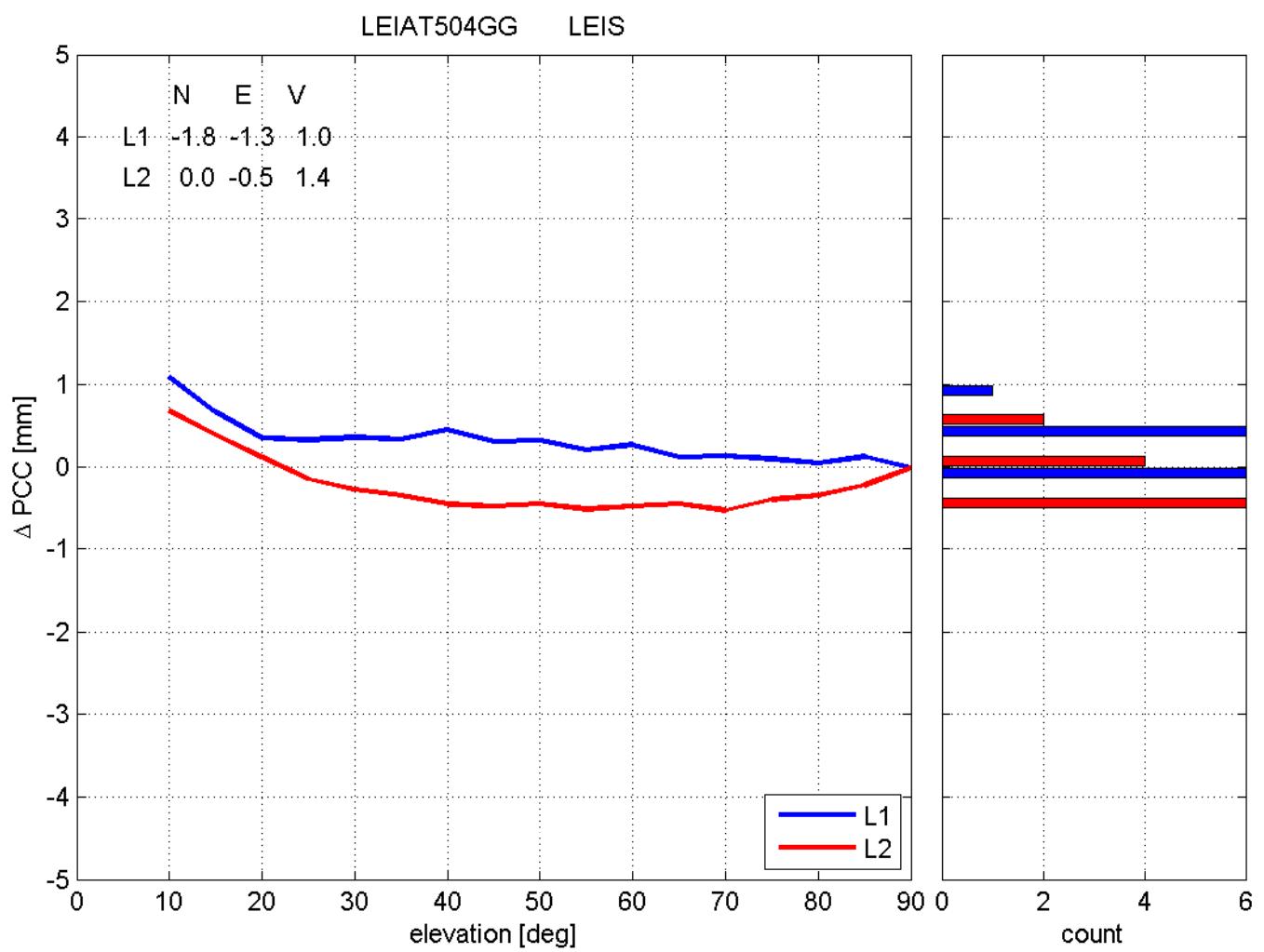
calib date:  
20-Nov-2006

chokering (CR)



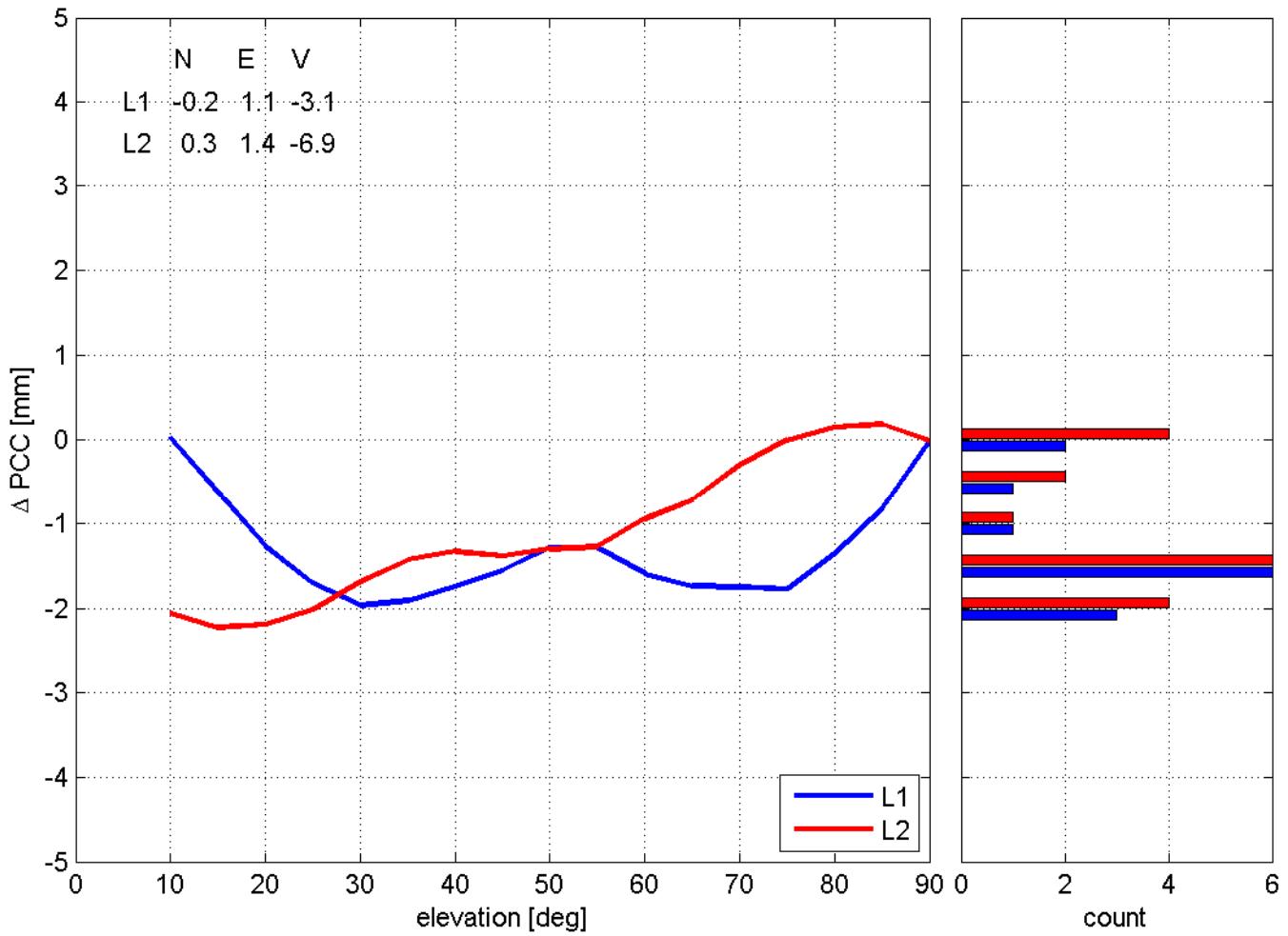
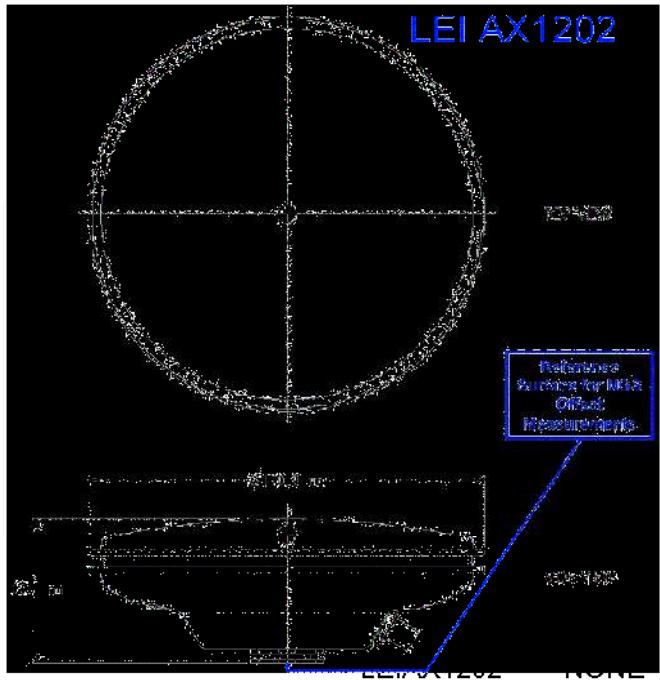
calib date:  
29-Nov-2006

chokering (CR)



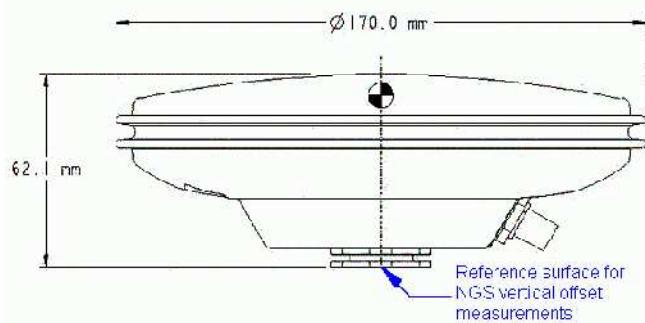
calib date:  
07-Nov-2005

rover antenna (no  
rx)

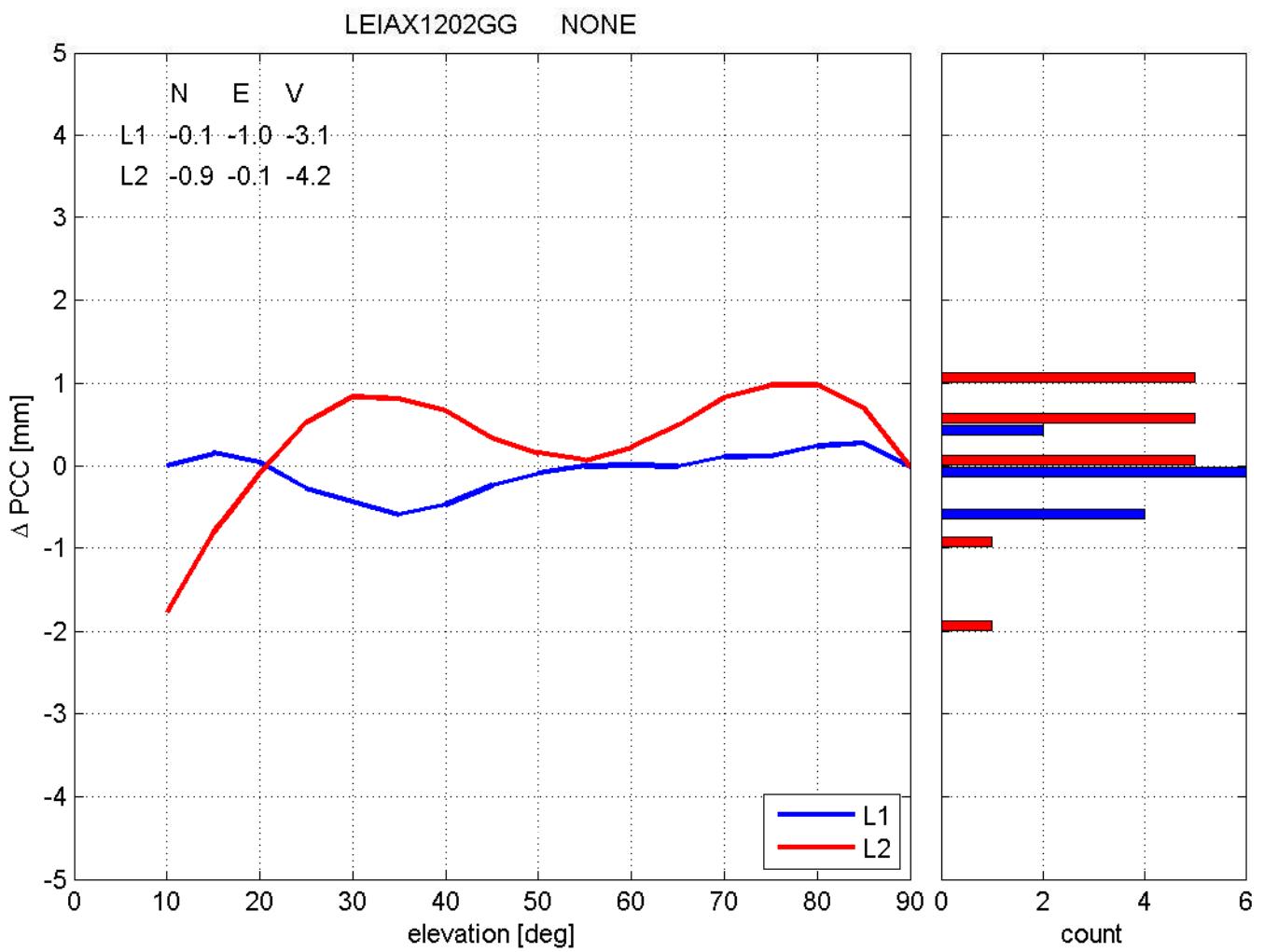


calib date:  
29-Sep-2006

rover antenna (no  
rx)

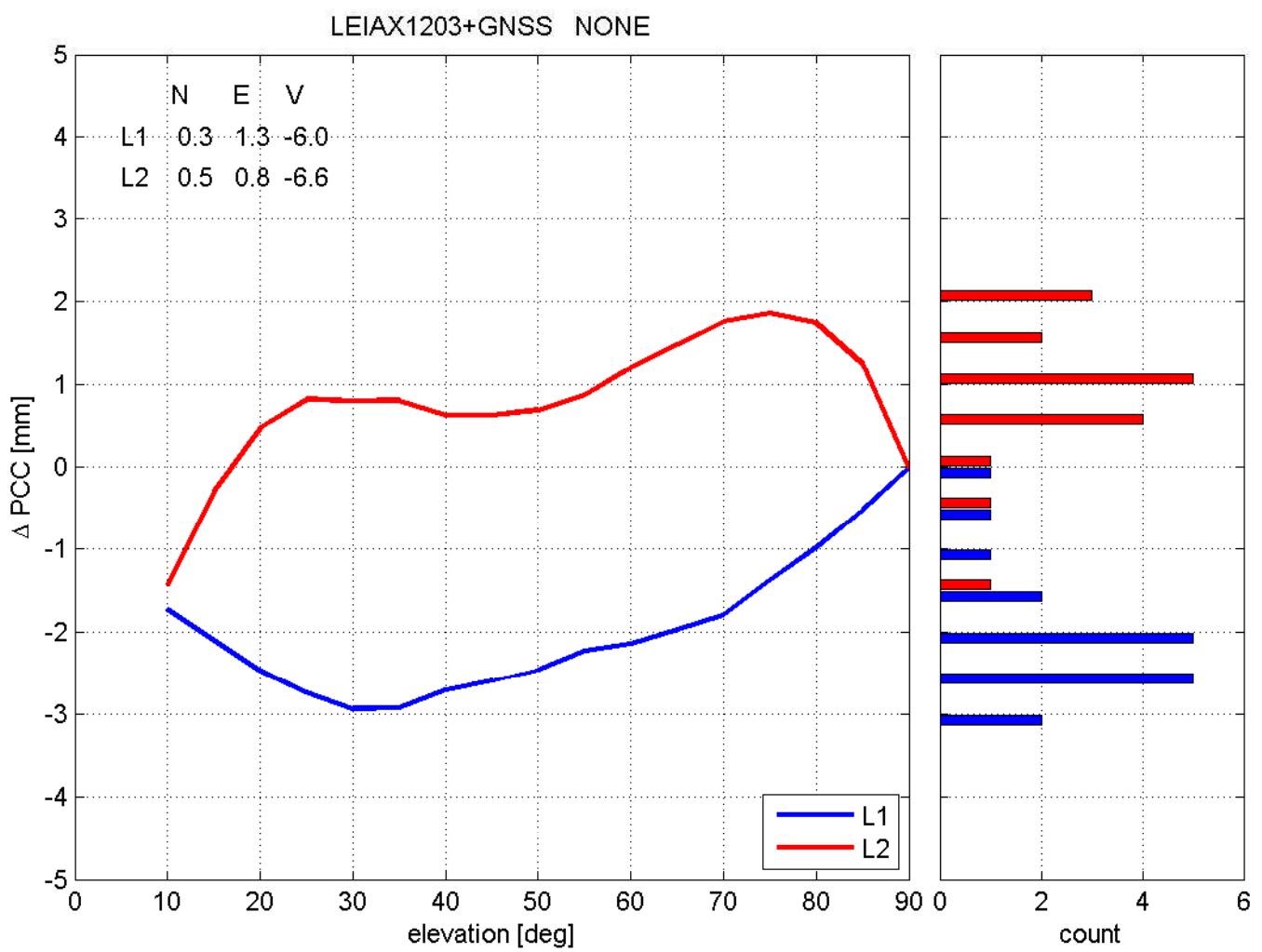
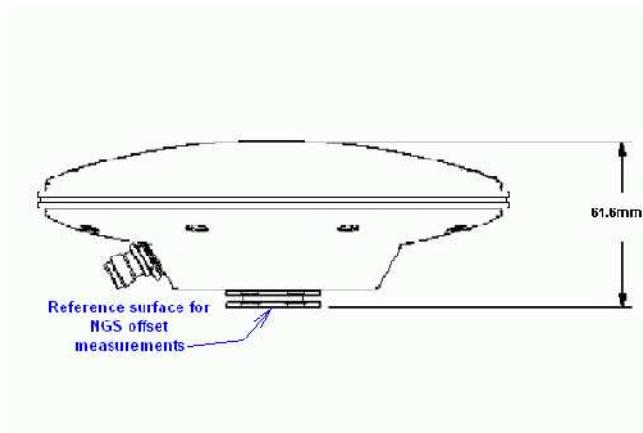


## LEIA1X1202GG



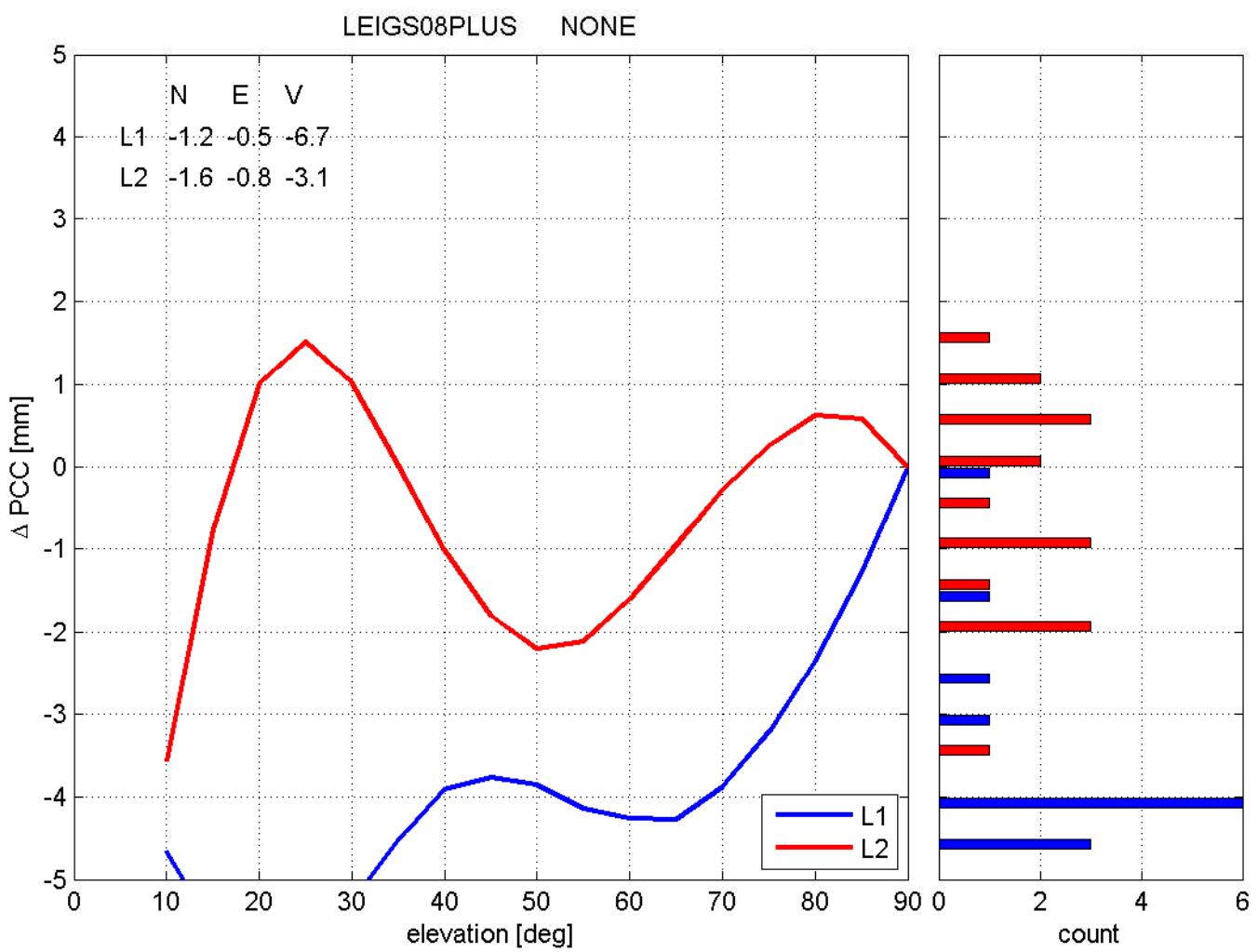
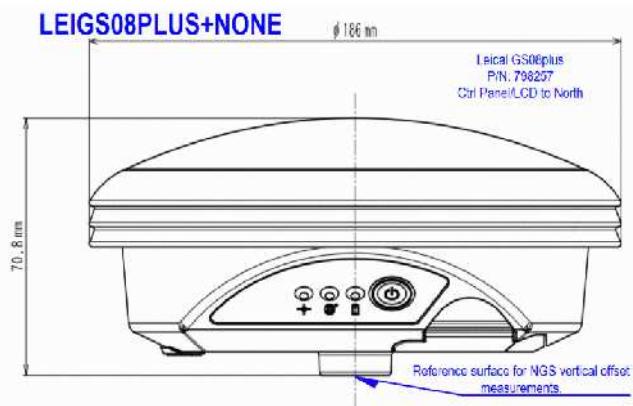
calib date:  
14-Dec-2008

rover antenna (no  
rx)



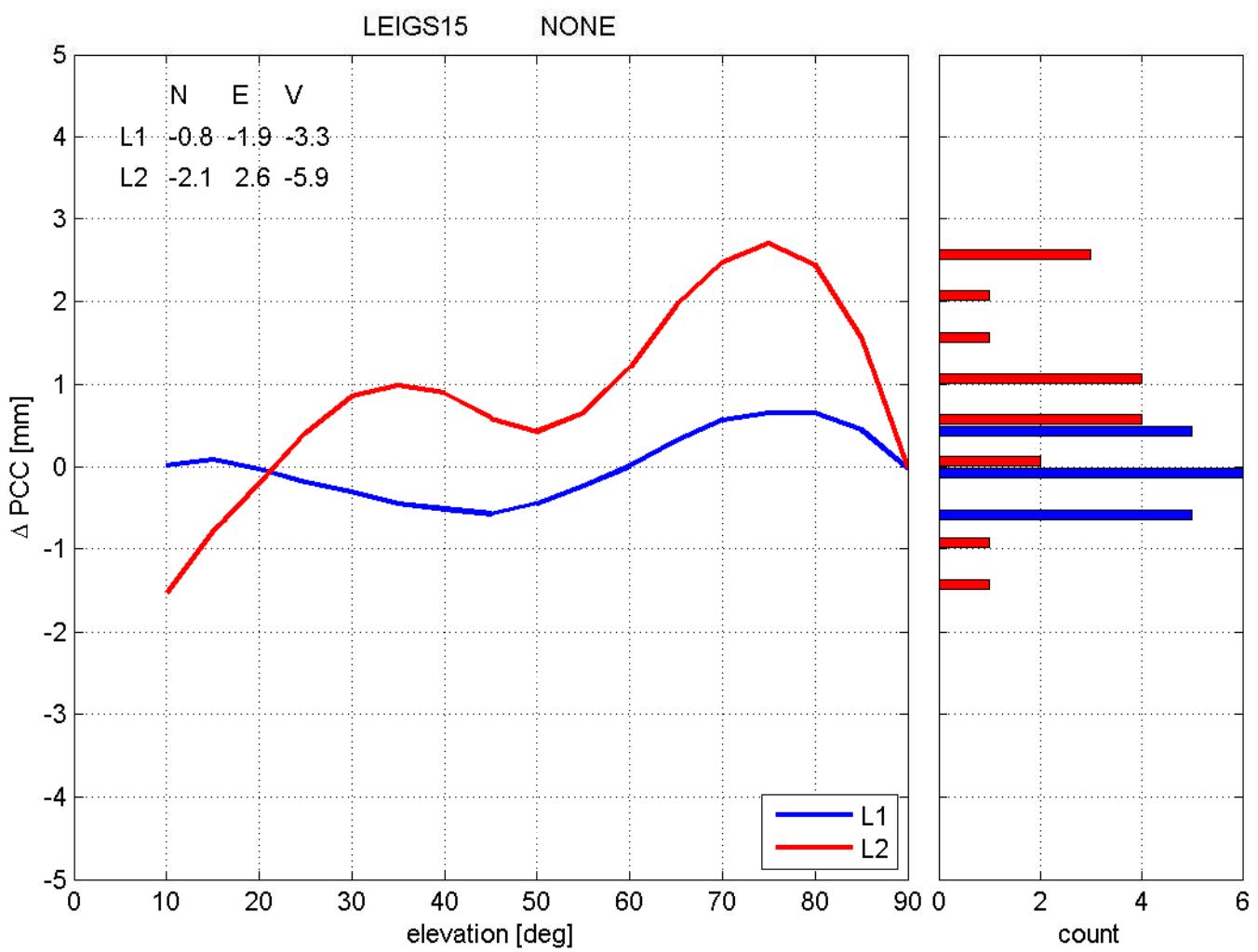
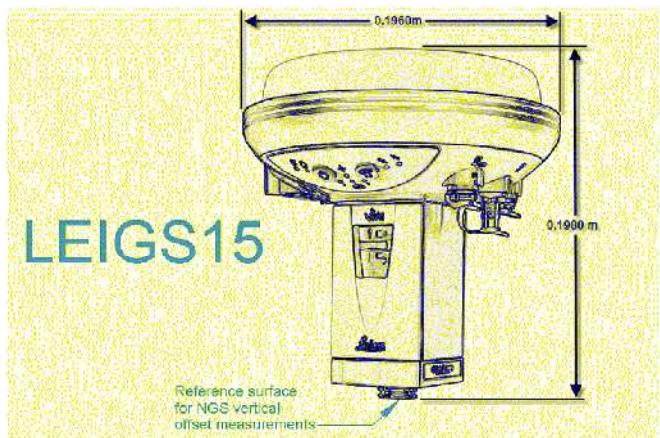
calib date:  
14-Aug-2012

integrated  
antenna/receiver



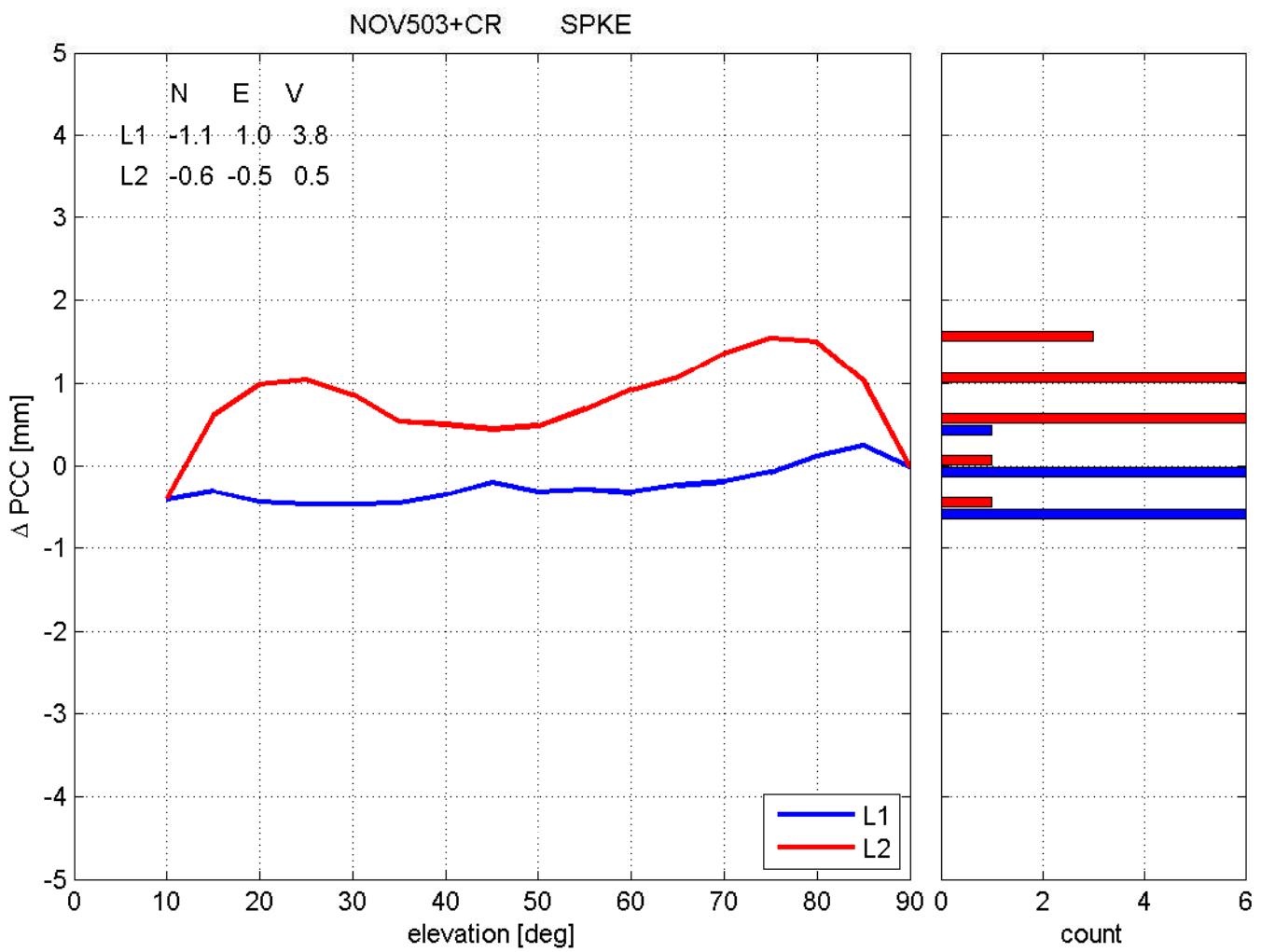
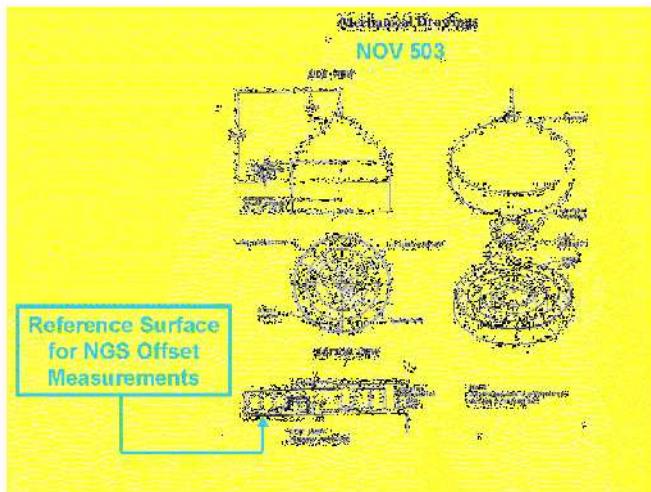
calib date:  
08-Mar-2010

integrated  
antenna/receiver



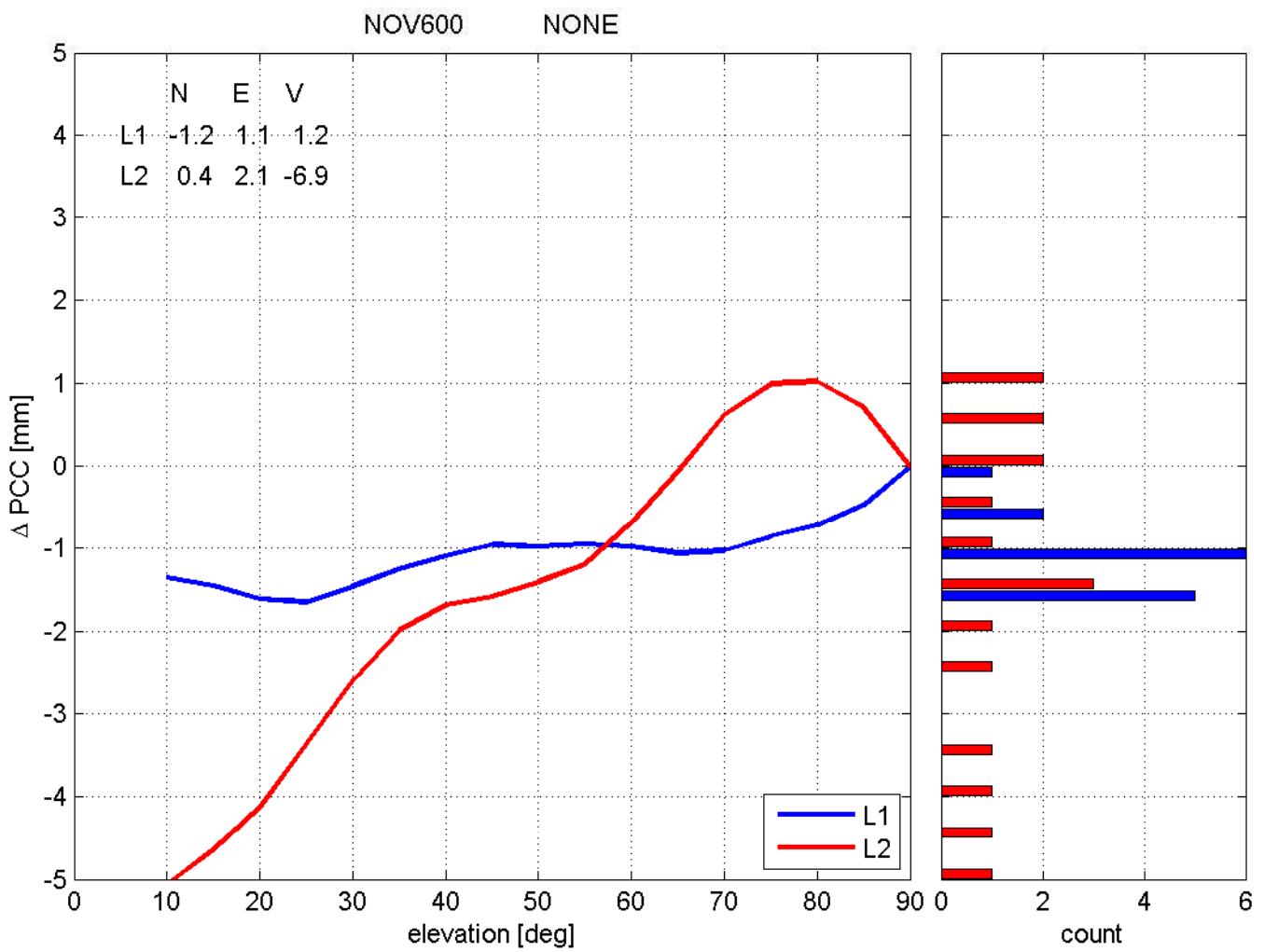
calib date:  
22-Aug-2000

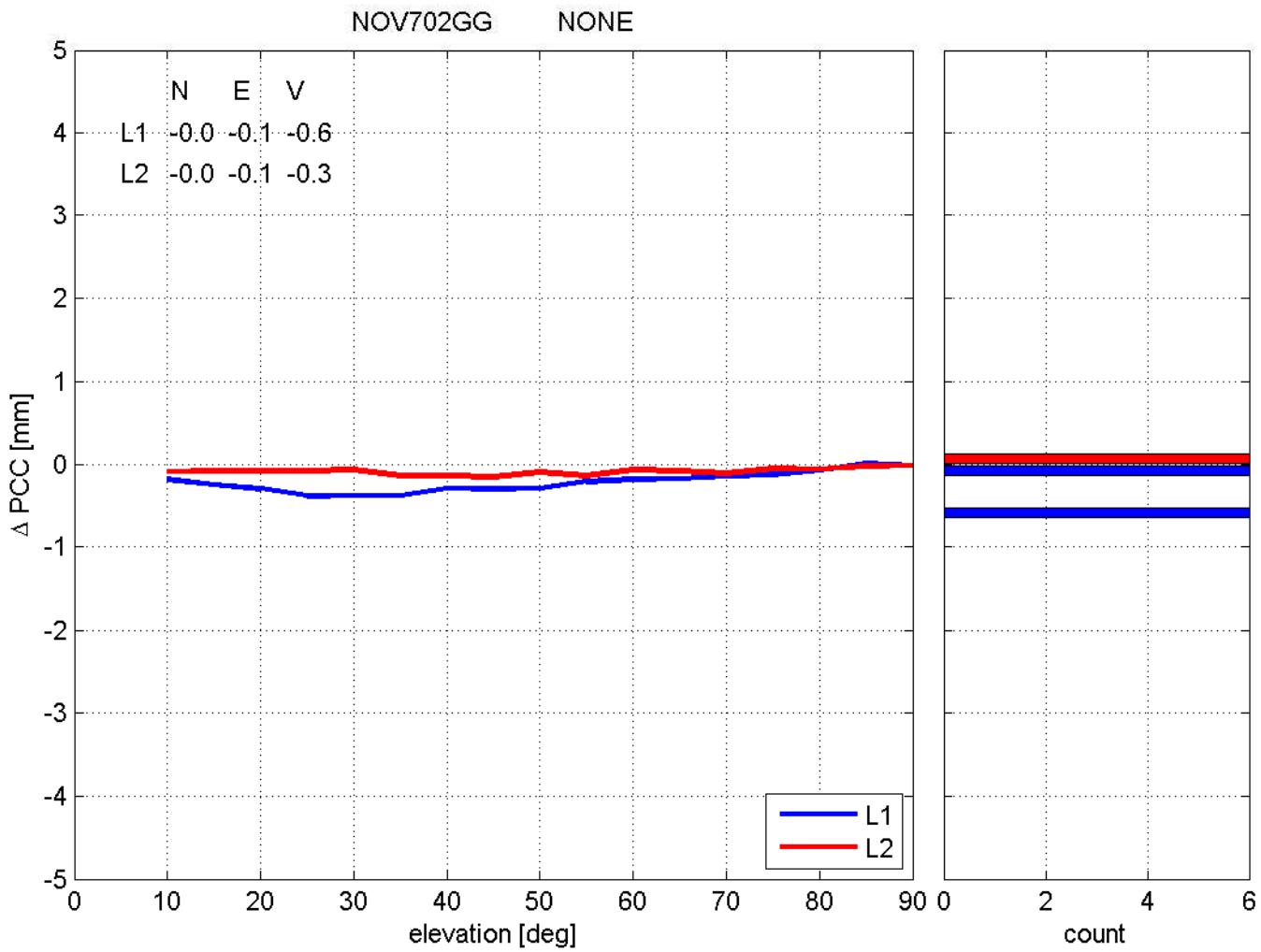
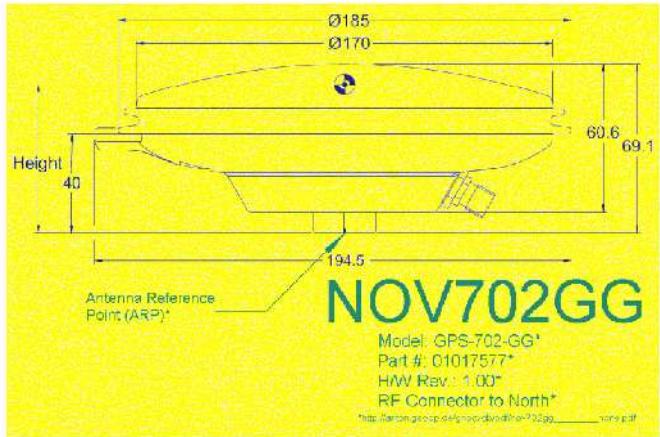
chokering (CR)



calib date:  
13-Mar-2001

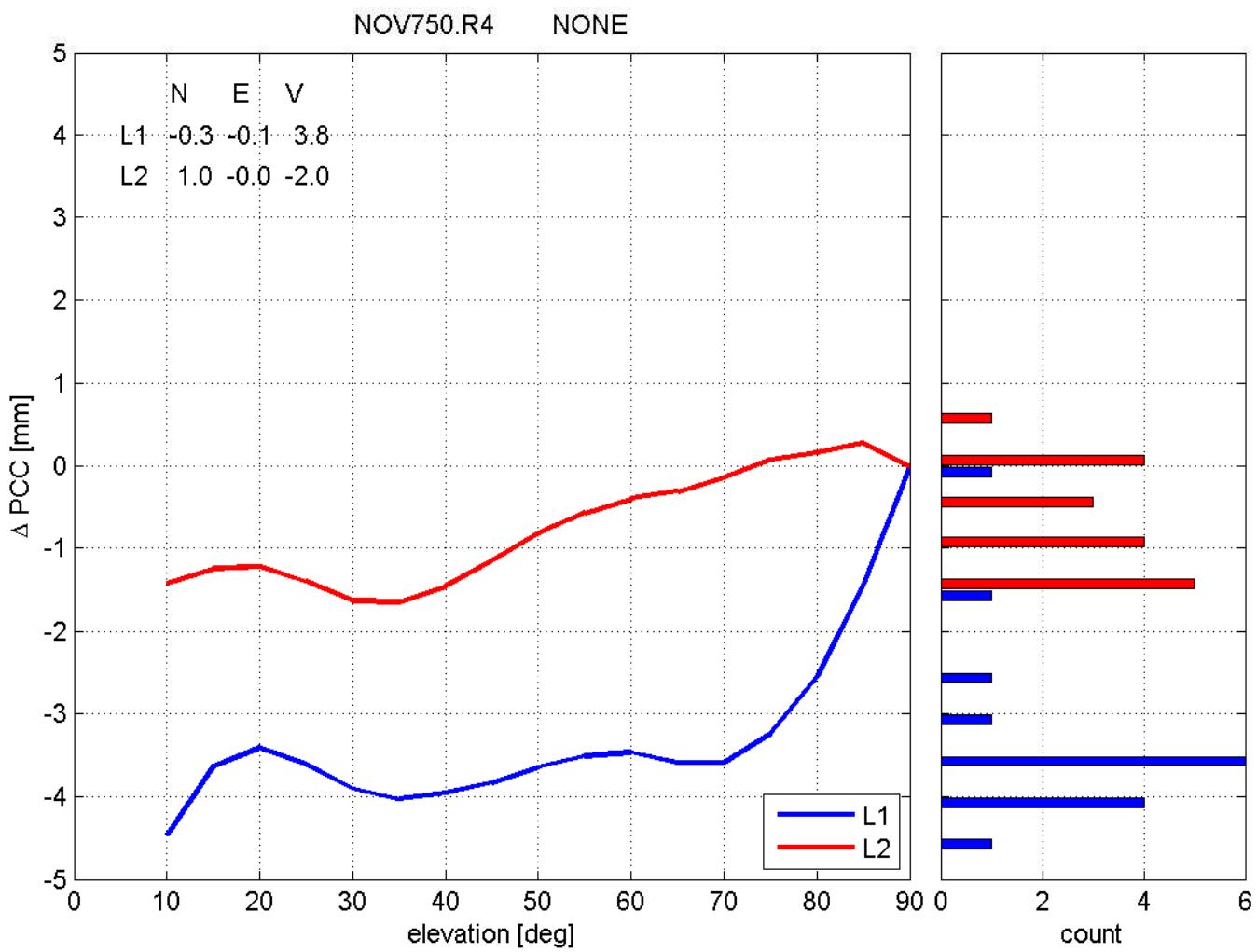
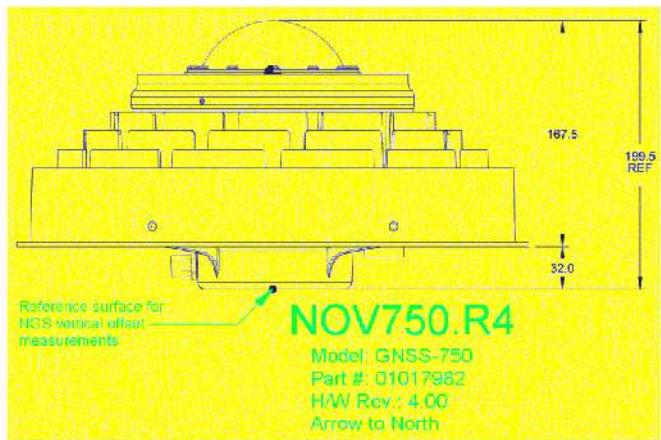
rover antenna (no  
rx)





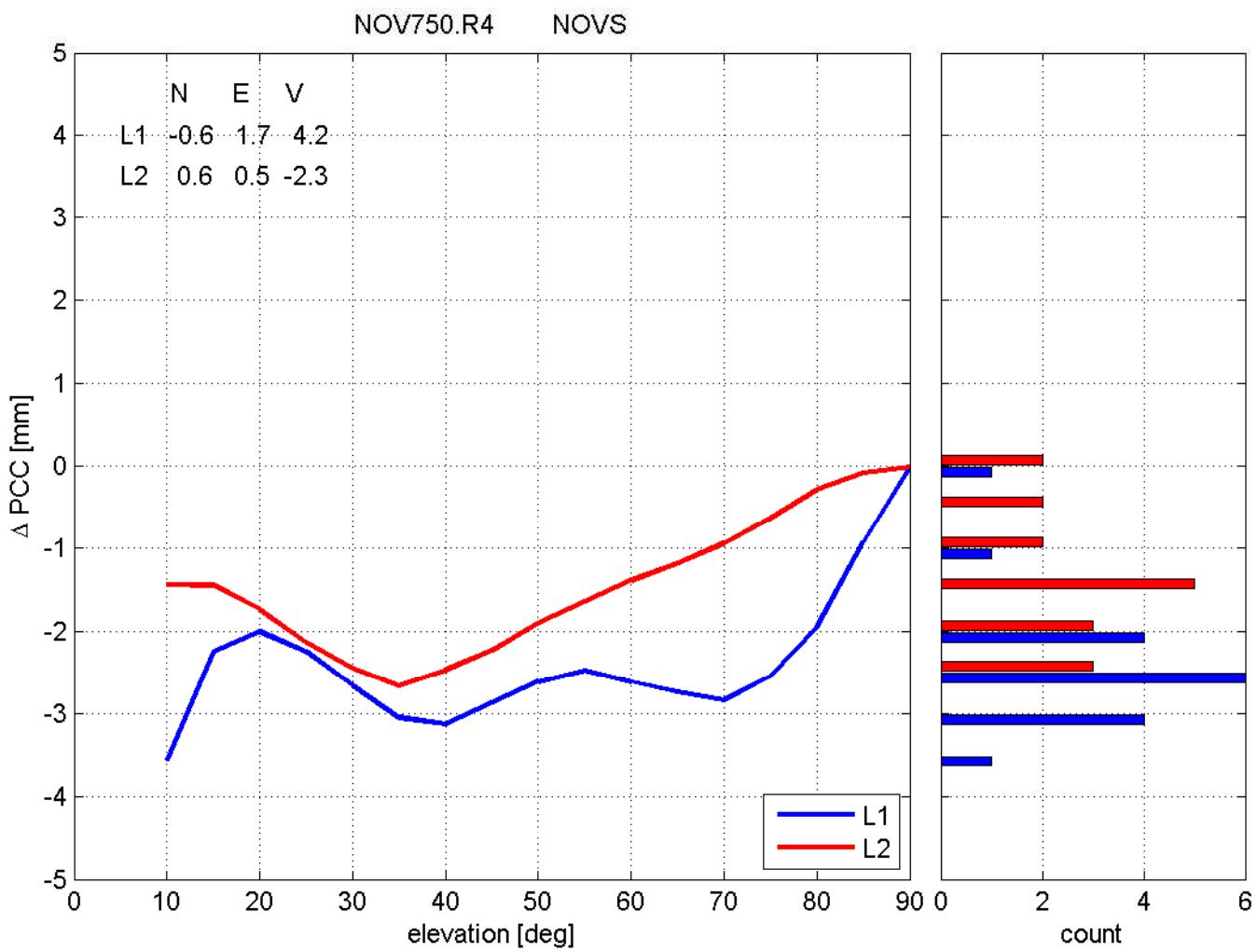
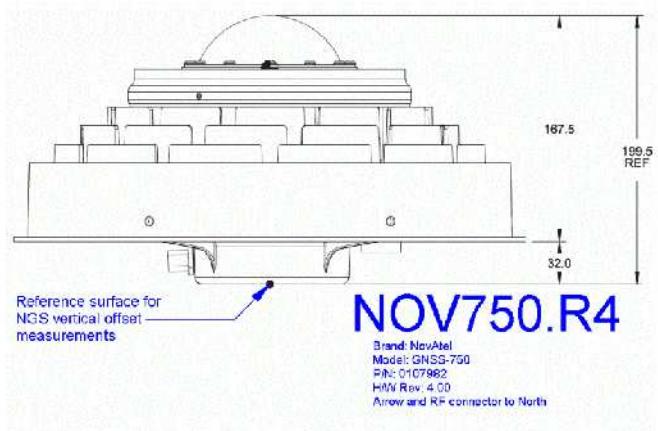
calib date:  
10-Nov-2010

non-standard  
chokering



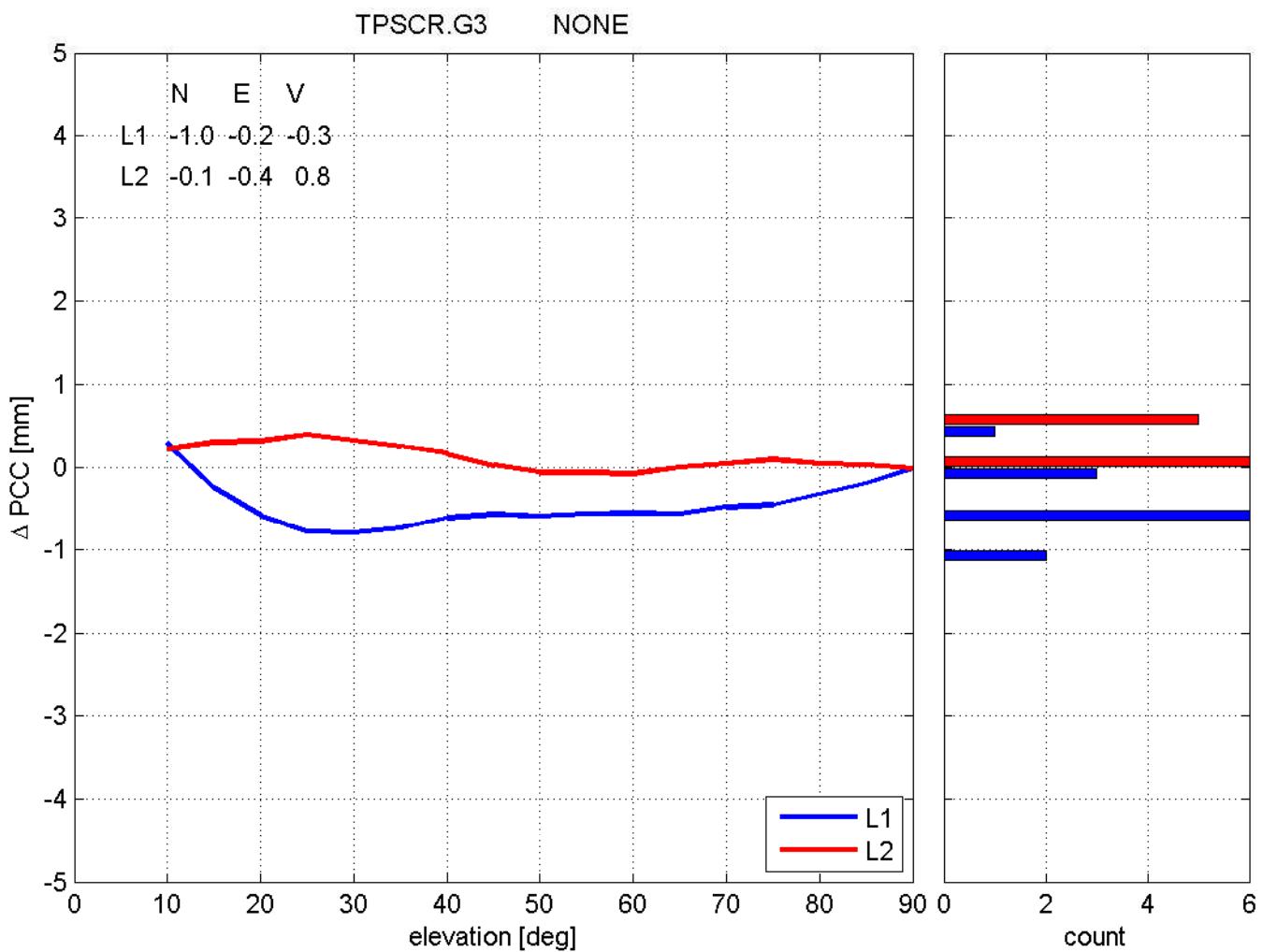
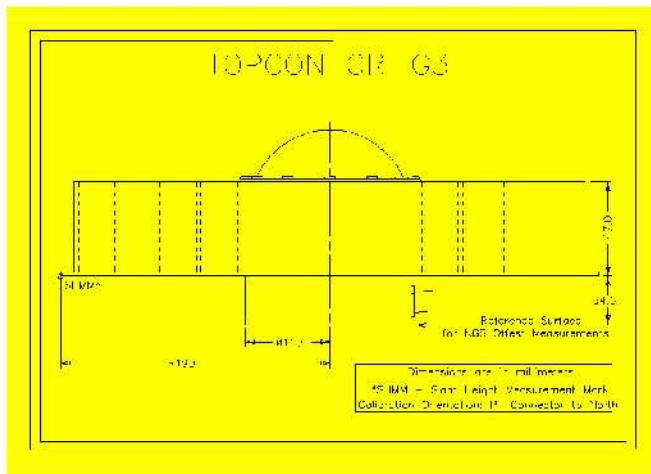
calib date:  
06-Mar-2011

non-standard  
chokering



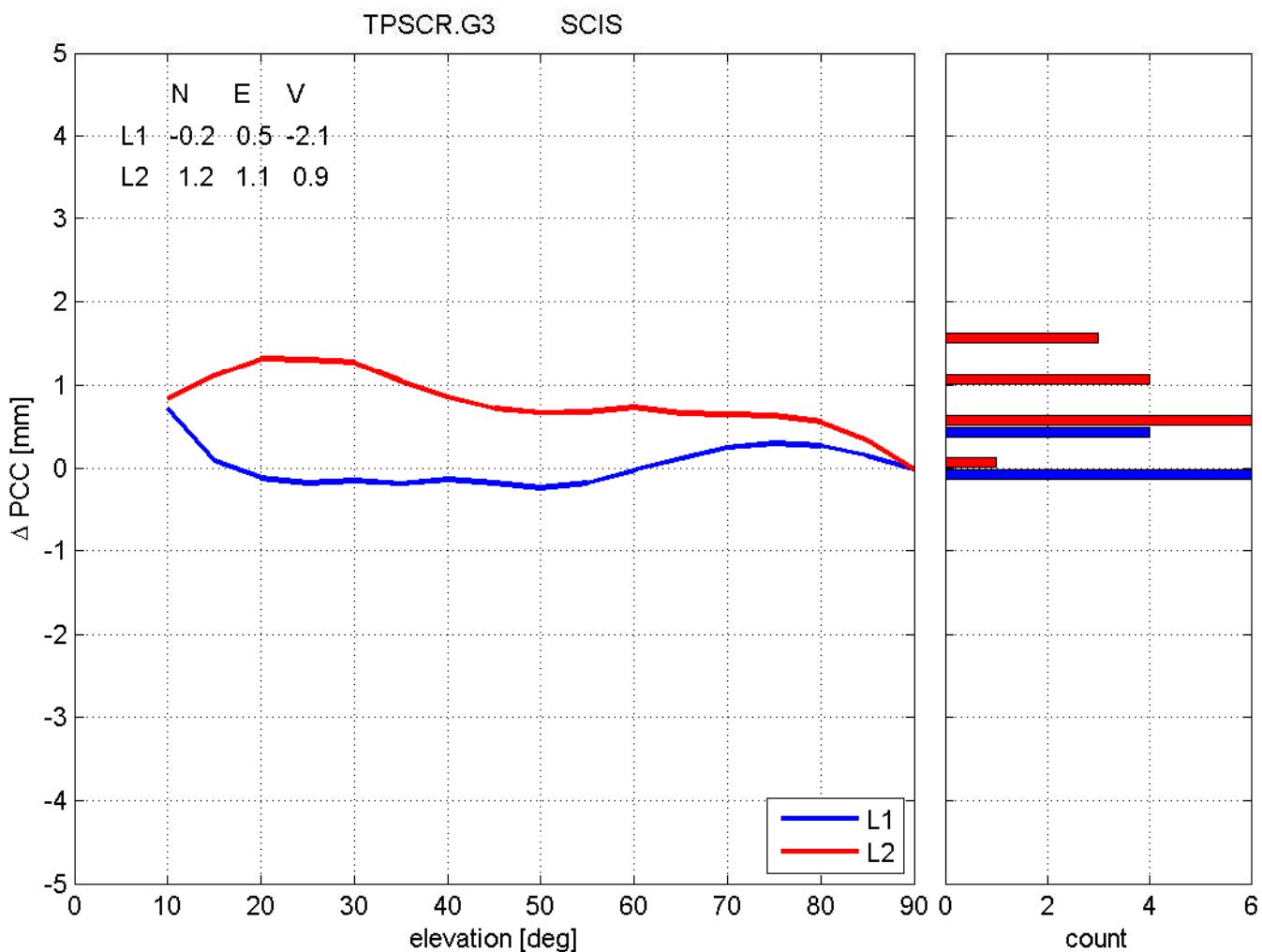
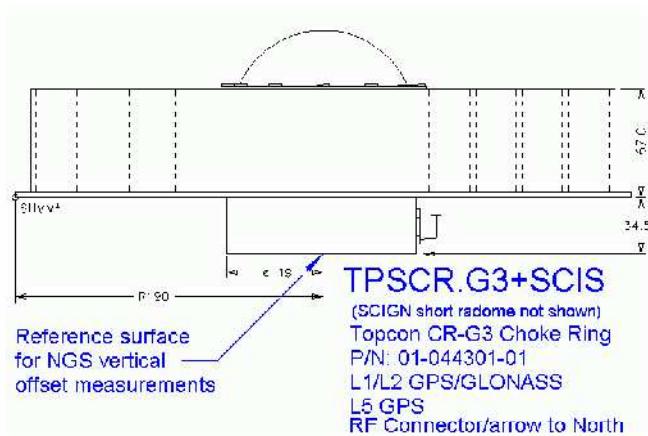
calib date:  
07-Jun-2006

chokering (CR)



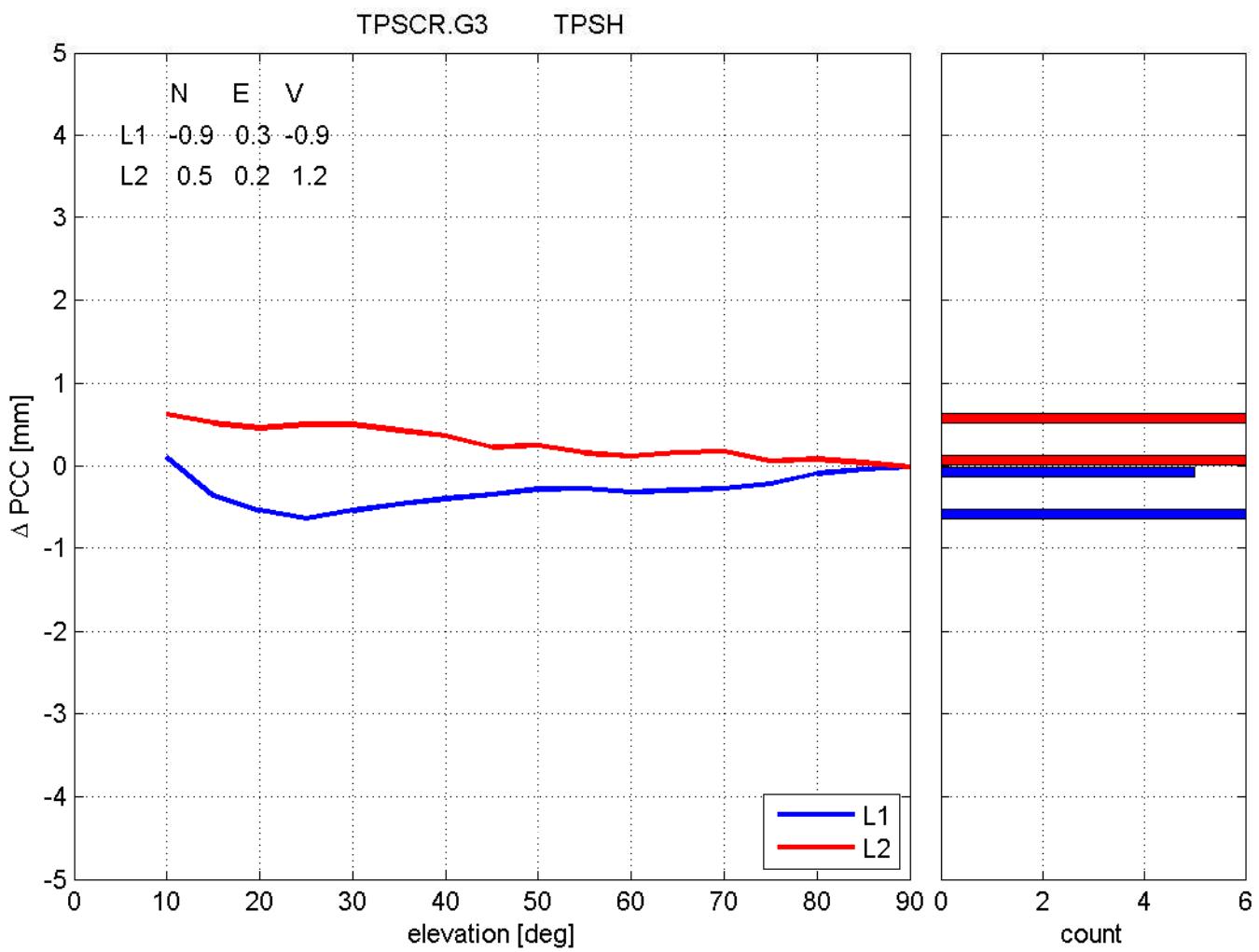
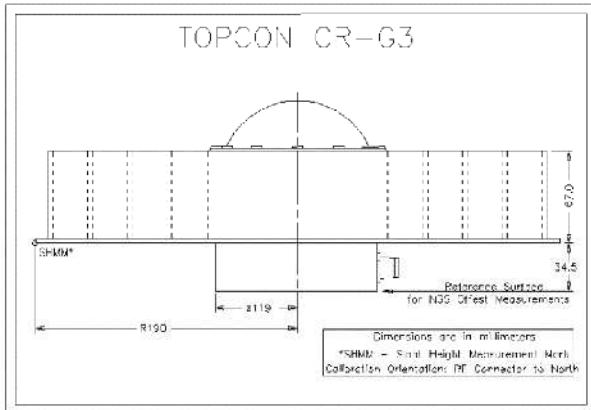
calib date:  
30-Nov-2010

chokering (CR)



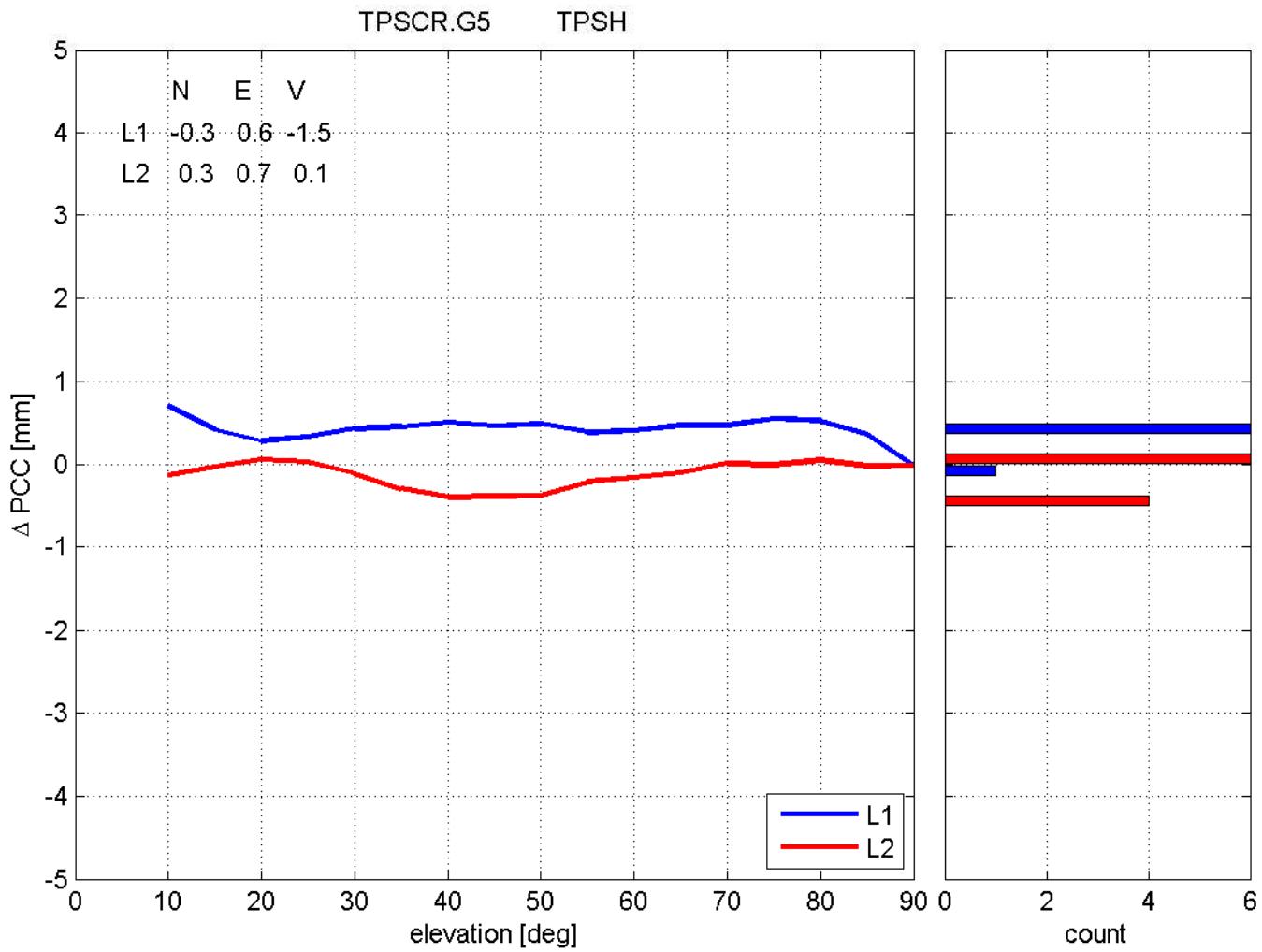
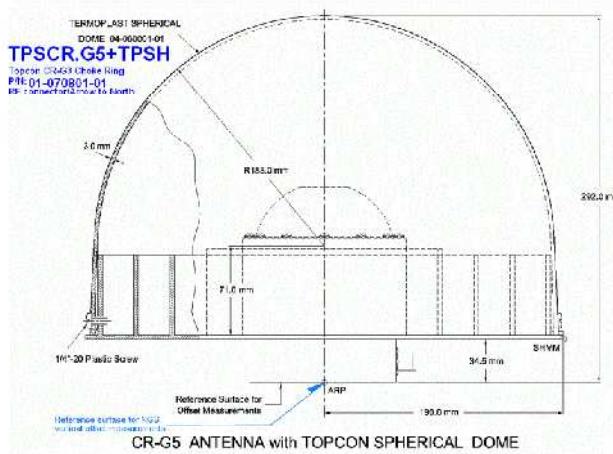
calib date:  
24-Feb-2007

chokering (CR)



calib date:  
09-Jun-2011

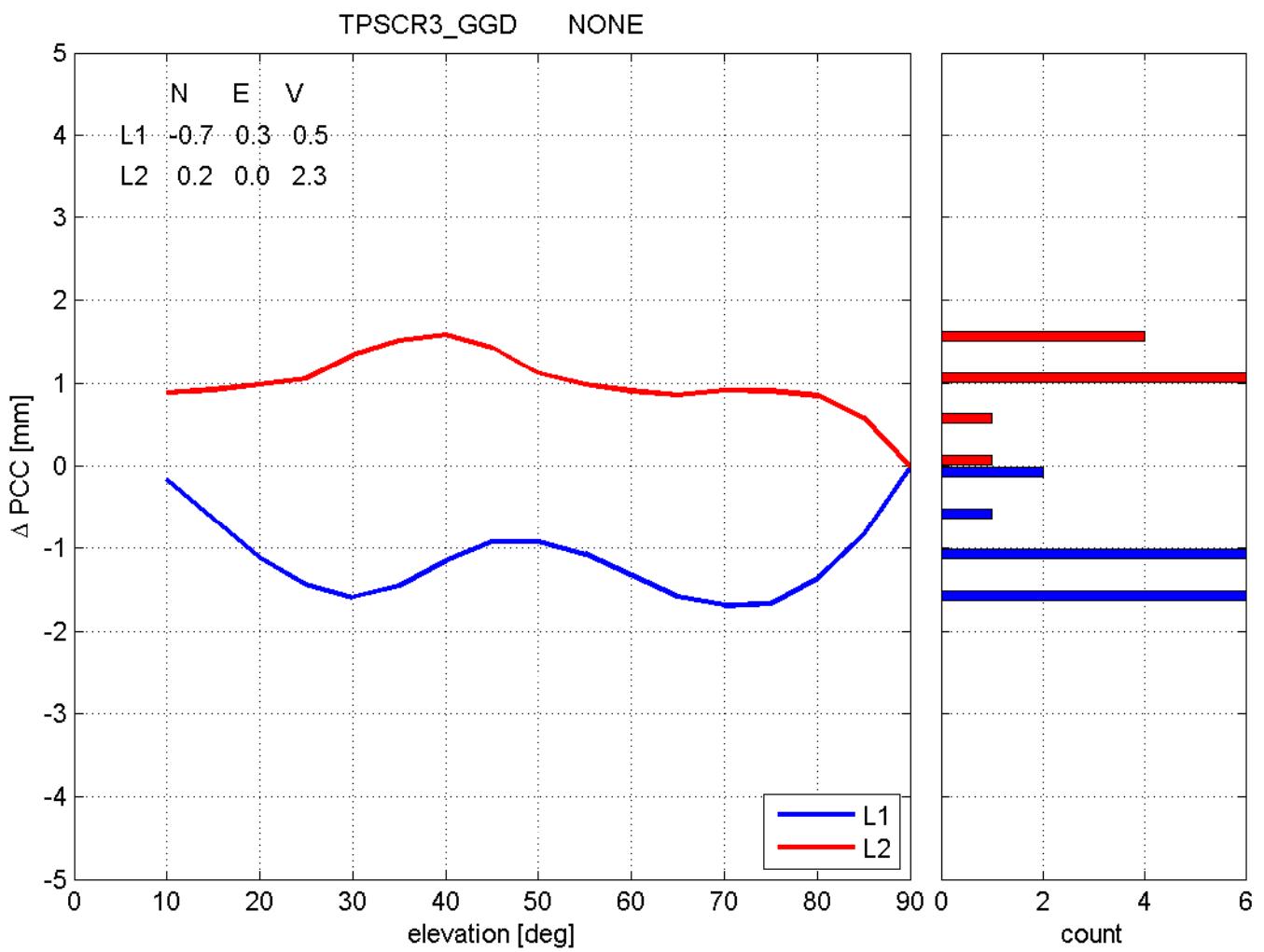
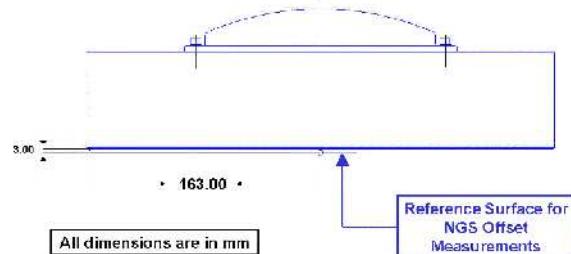
chokering (CR)



calib date:  
11-Mar-2002

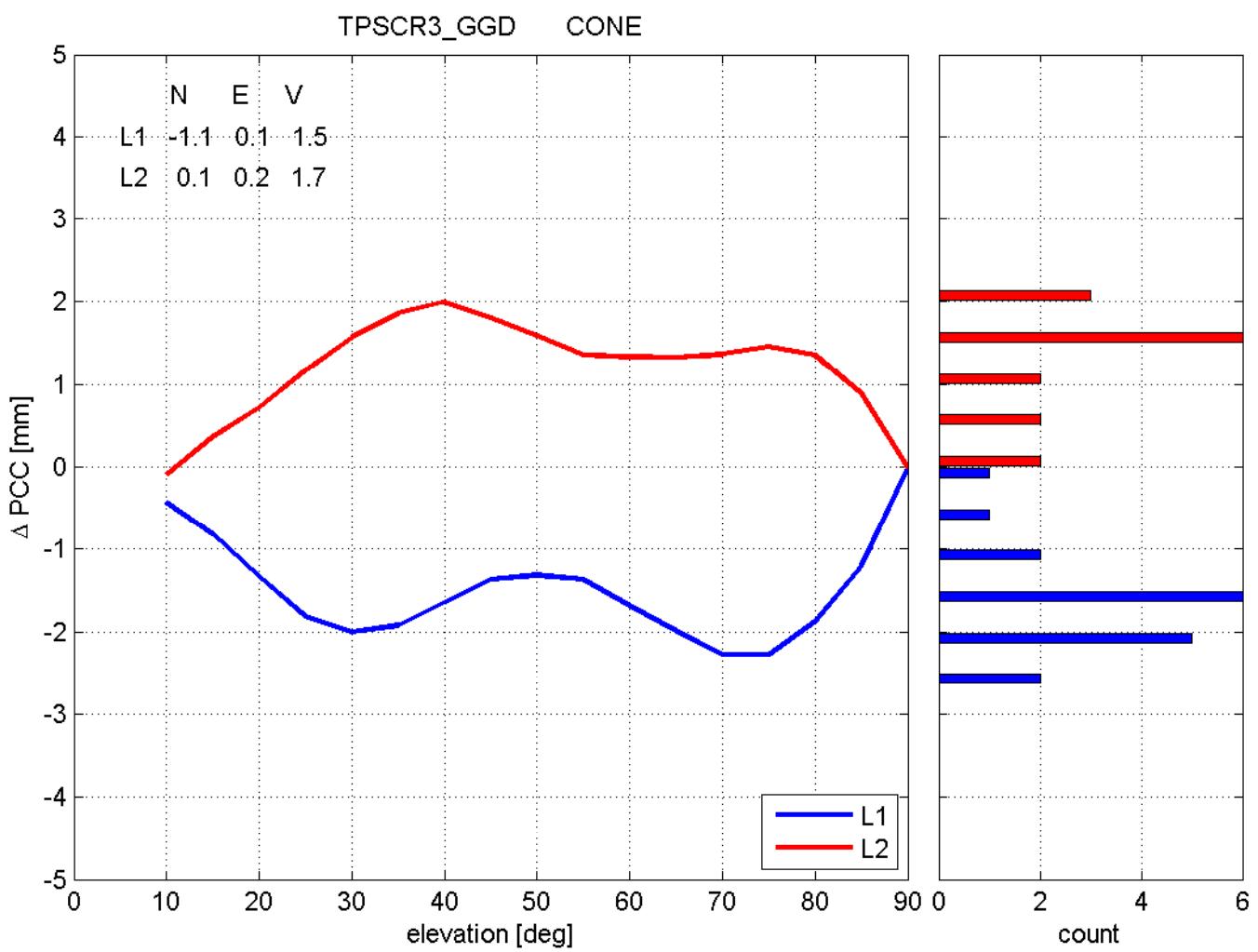
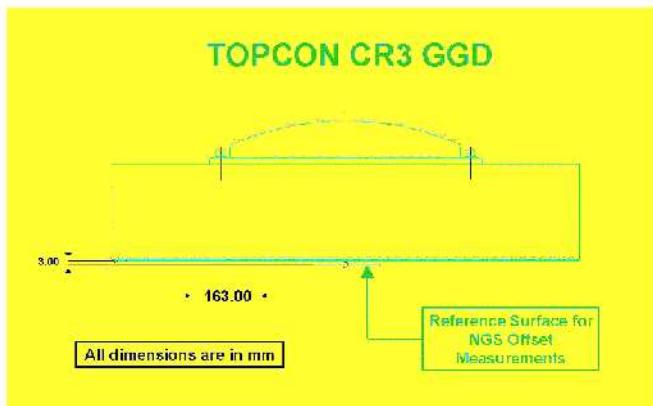
chokering (CR)

### TOPCON CR3 GGD



calib date:  
11-Mar-2002

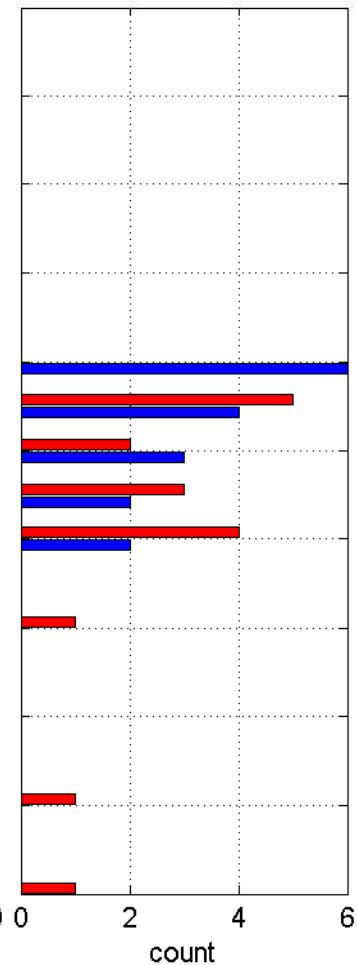
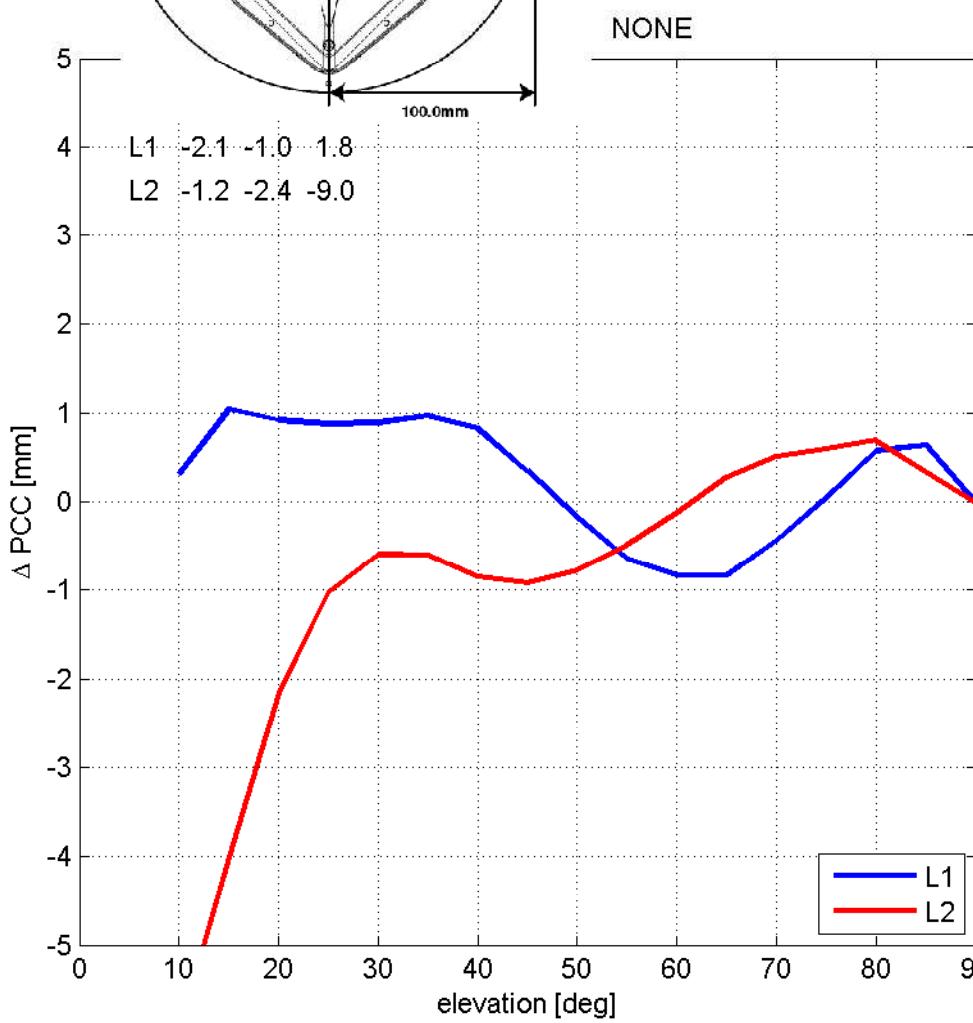
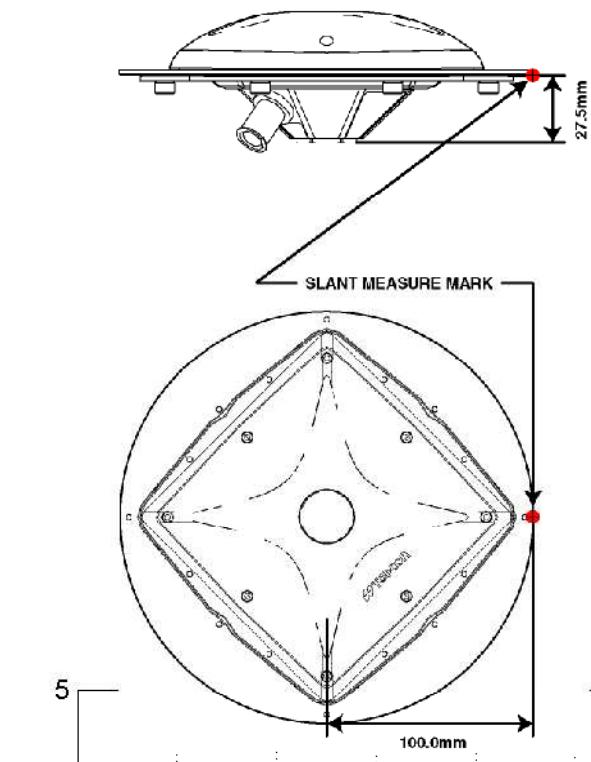
chokering (CR)



calib date:  
14-Jul-2004

patch with  
groundplane  
(+GP)

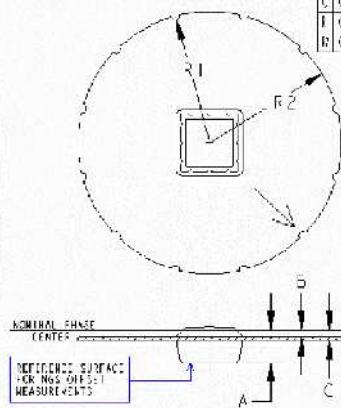
**Topcon PG-A1  
with Ground Plane**



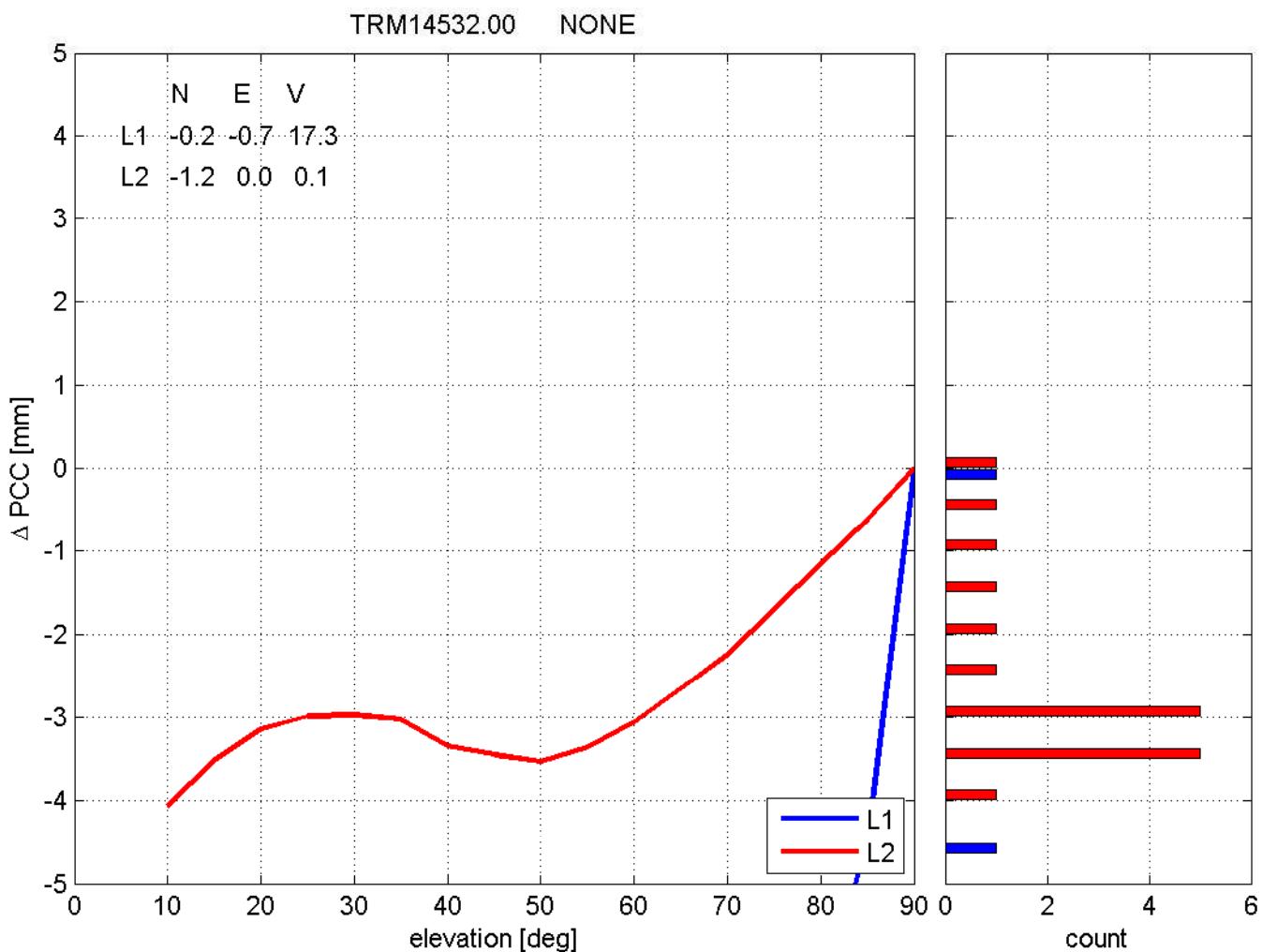
calib date:  
27-Oct-1997

patch with  
groundplane  
(+GP)

TRM 14532.00

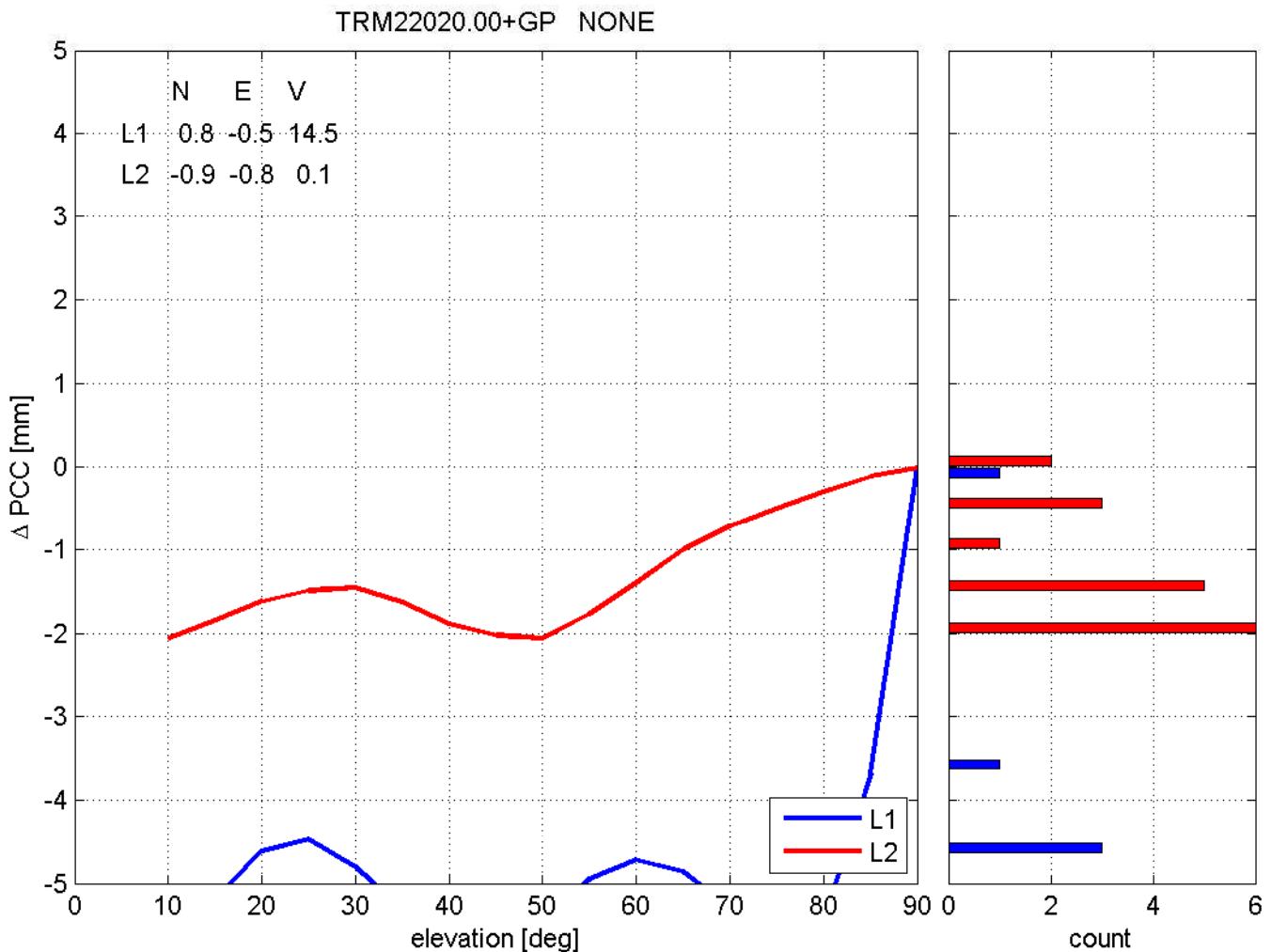
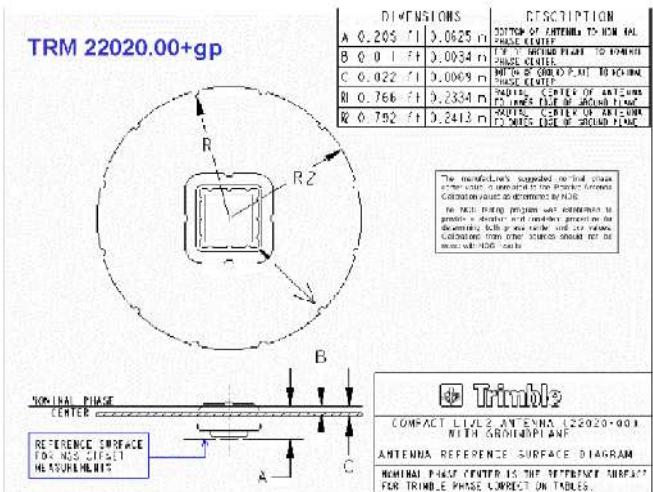


| DIMENSIONS |       | DESCRIPTION  |
|------------|-------|--|
| A          | 0.227 | 1 - 0.0692 m<br>EX. POINT OF ANTENNA TO NORMAL<br>SURFACE AT NOMINAL PHASE CENTER                  |
| B          | 0.021 | 1 - 0.1063 m<br>LAST STUFF<br>TO NOMINAL PHASE CENTER  |
| C          | 0.031 | 1 - 0.095 m<br>LAST STUFF<br>TO NOMINAL PHASE CENTER   |
| D          | 0.766 | 1 - 0.2334 m<br>TOP EDGE OF GROUND PLANE TO NOMINAL PHASE CENTER                                   |
| E          | 0.792 | 1 - 0.2413 m<br>TOP EDGE OF GROUND PLANE<br>TO CENTER OF ANTENNA<br>TO CENTER EDGE OF GROUND PLANE |



calib date:  
27-Oct-1997

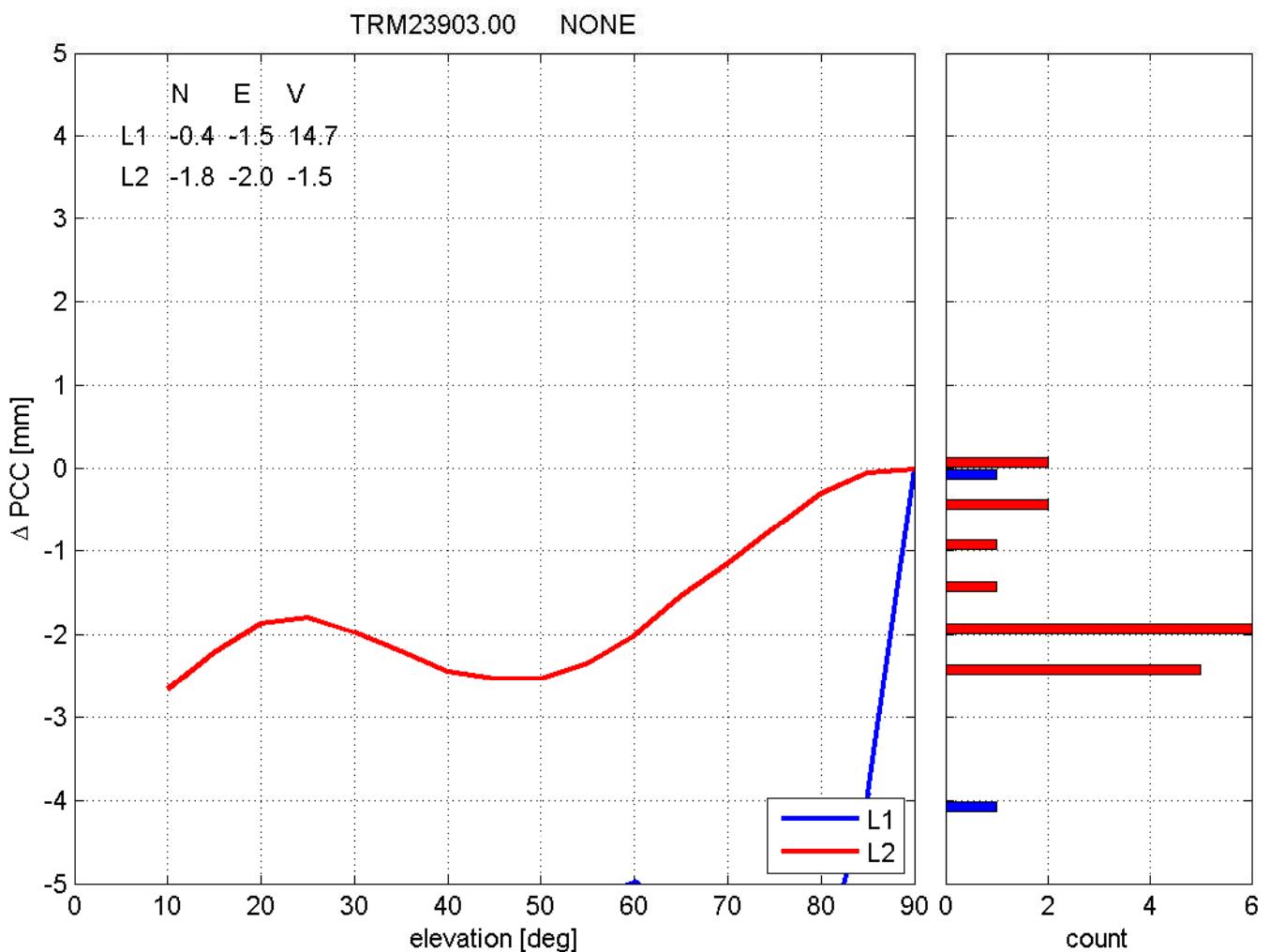
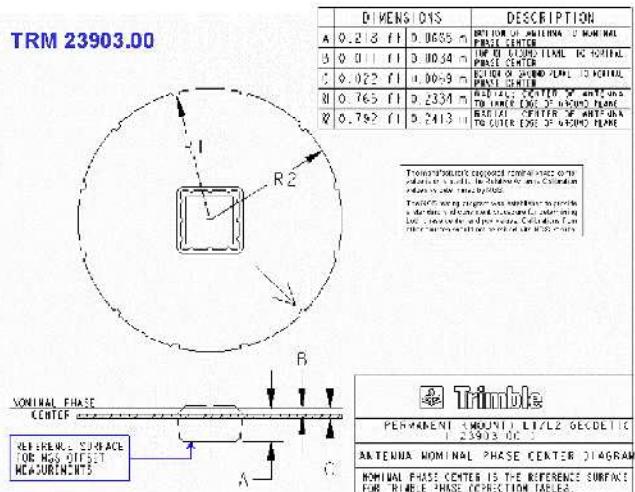
patch with  
groundplane  
(+GP)



calib date:  
27-Oct-1997

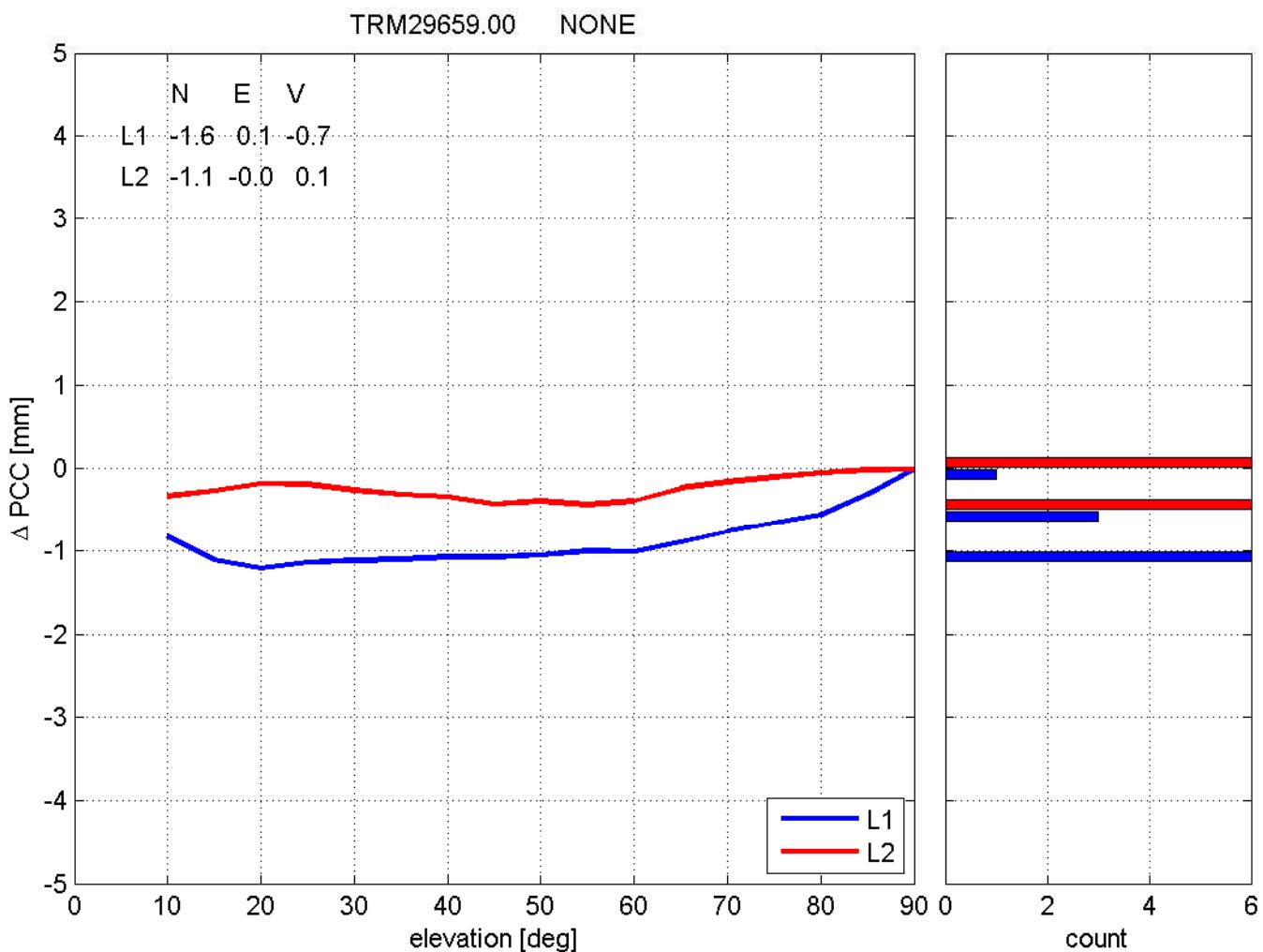
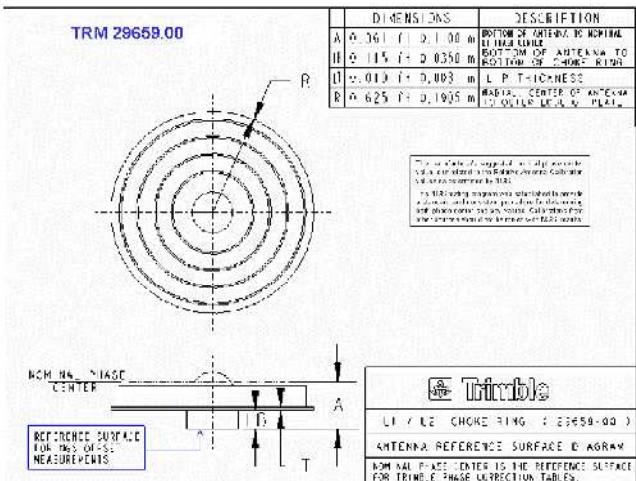
patch with  
groundplane  
(+GP)

TRM 23903.00



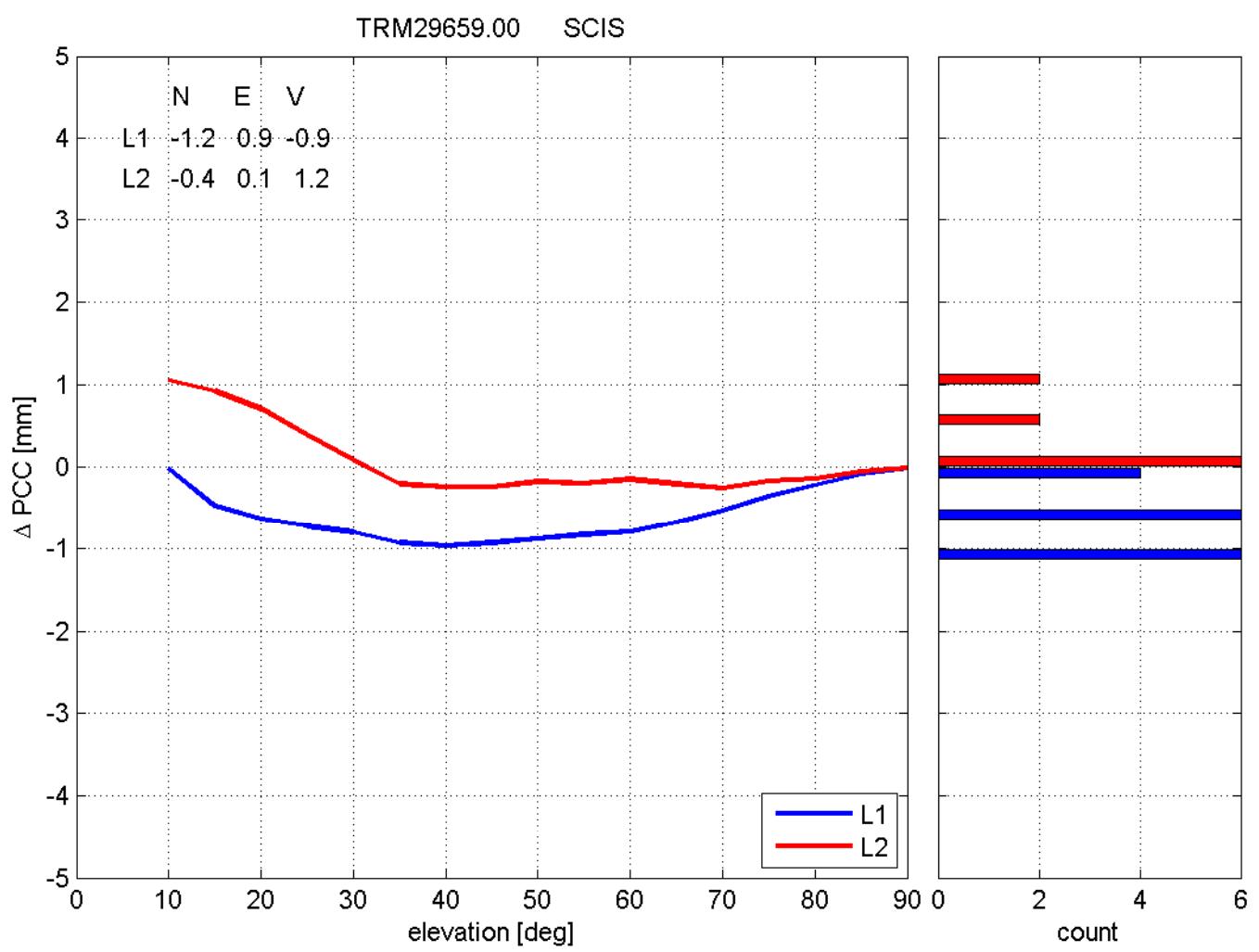
calib date:  
27-Oct-1997

chokering (CR)



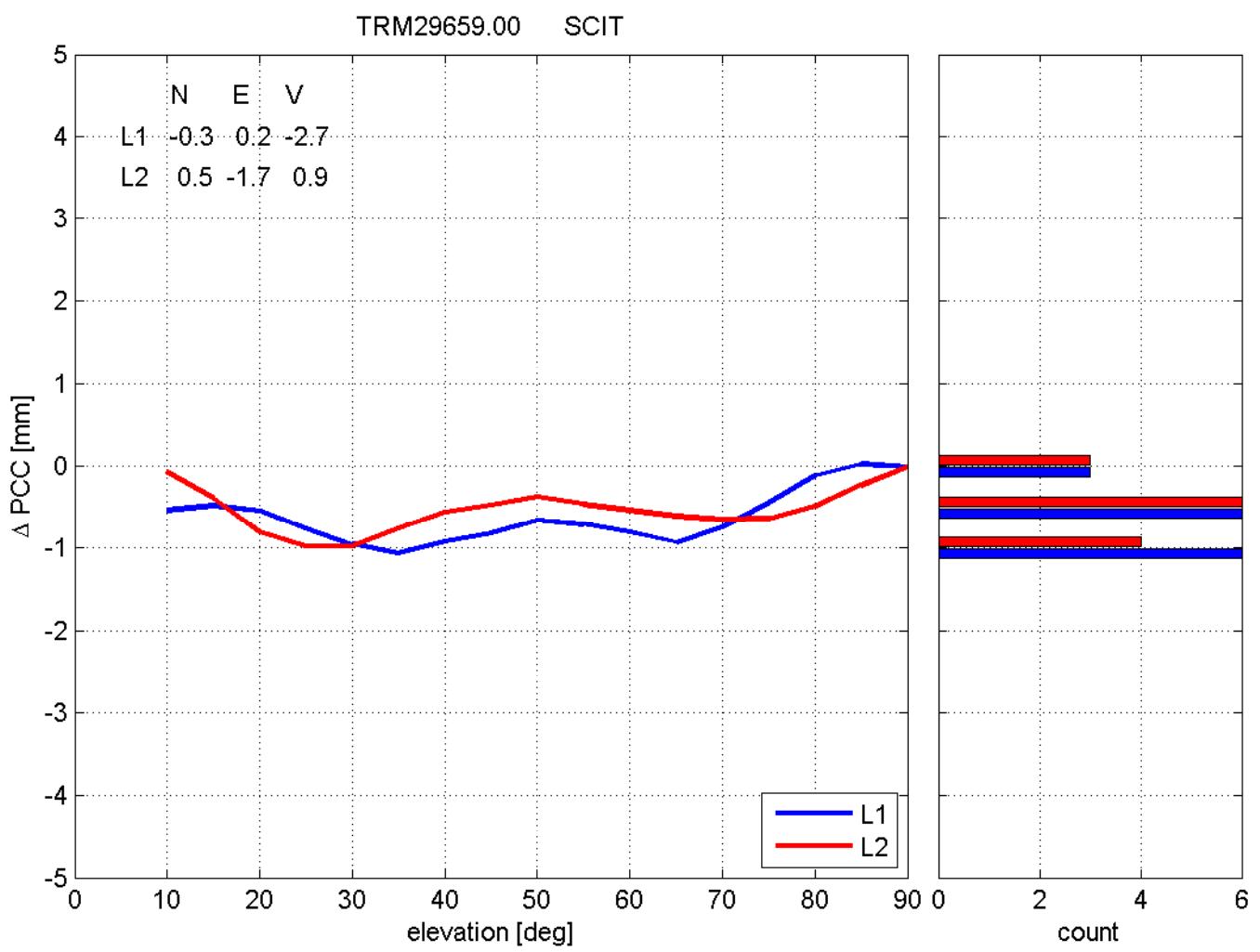
calib date:  
17-Jun-2005

chokering (CR)



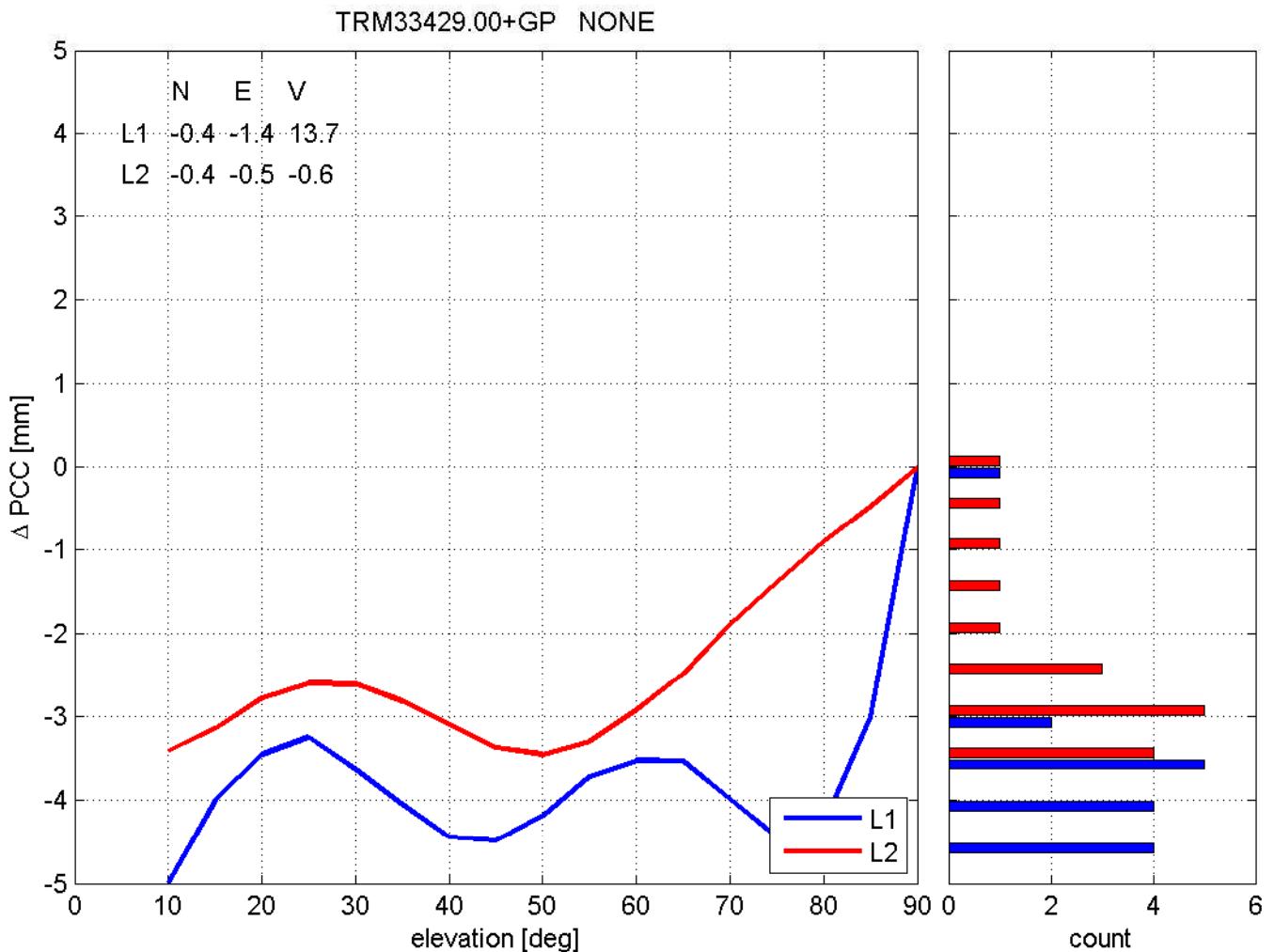
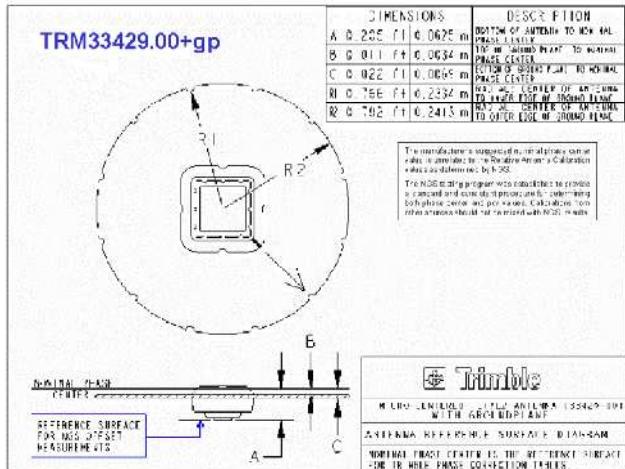
calib date:  
10-Jun-2005

chokering (CR)



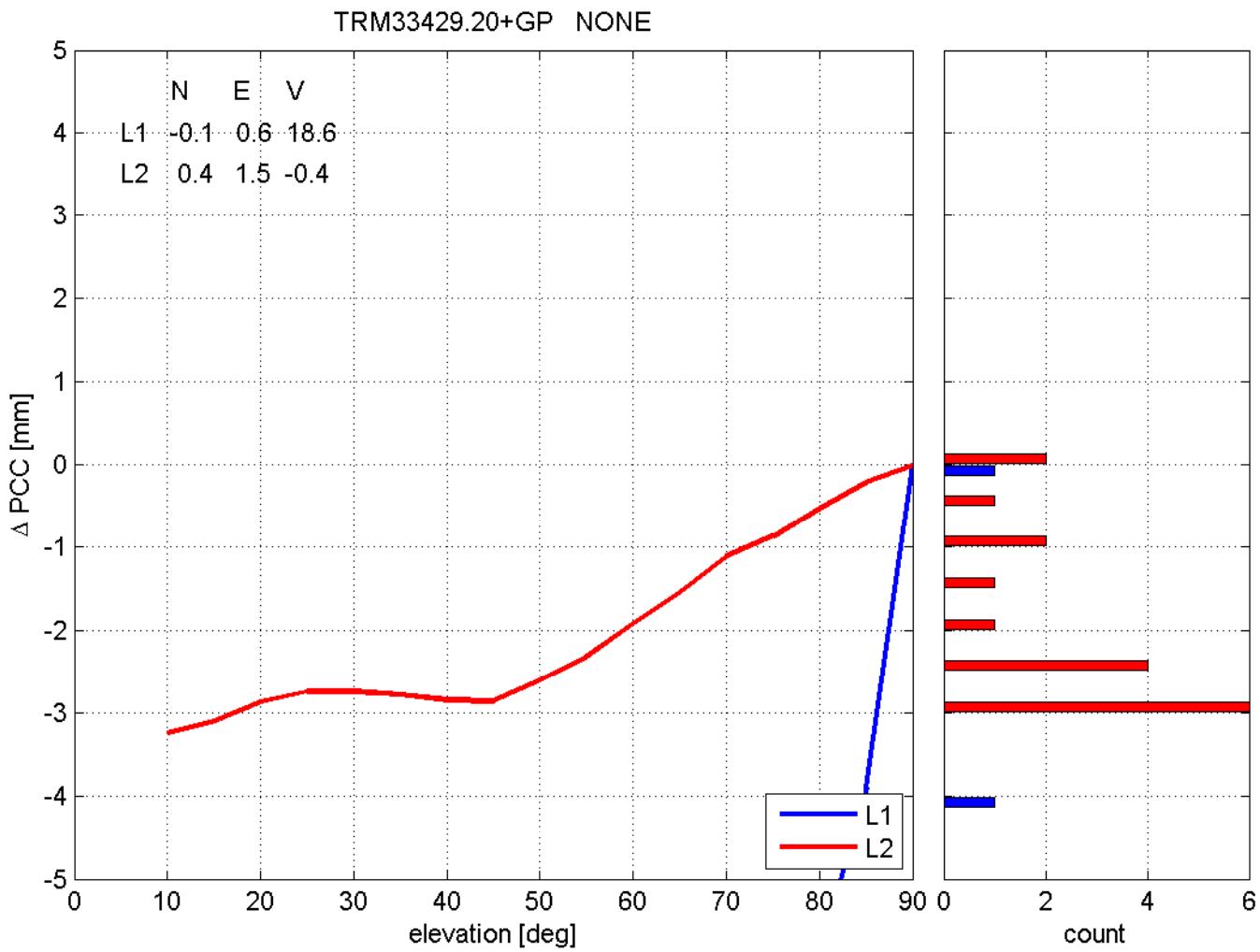
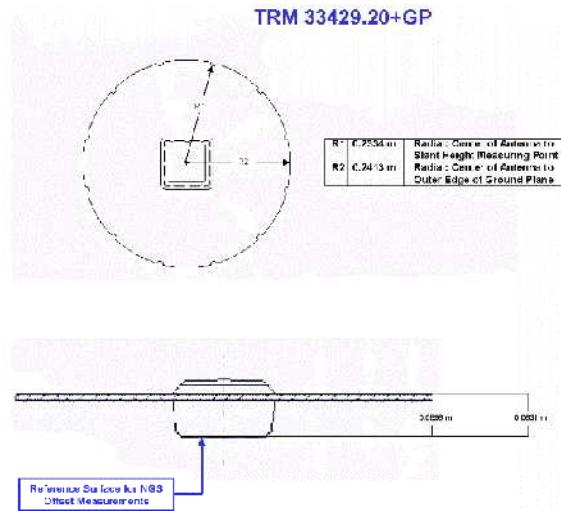
calib date:  
27-Oct-1997

patch with  
groundplane  
(+GP)



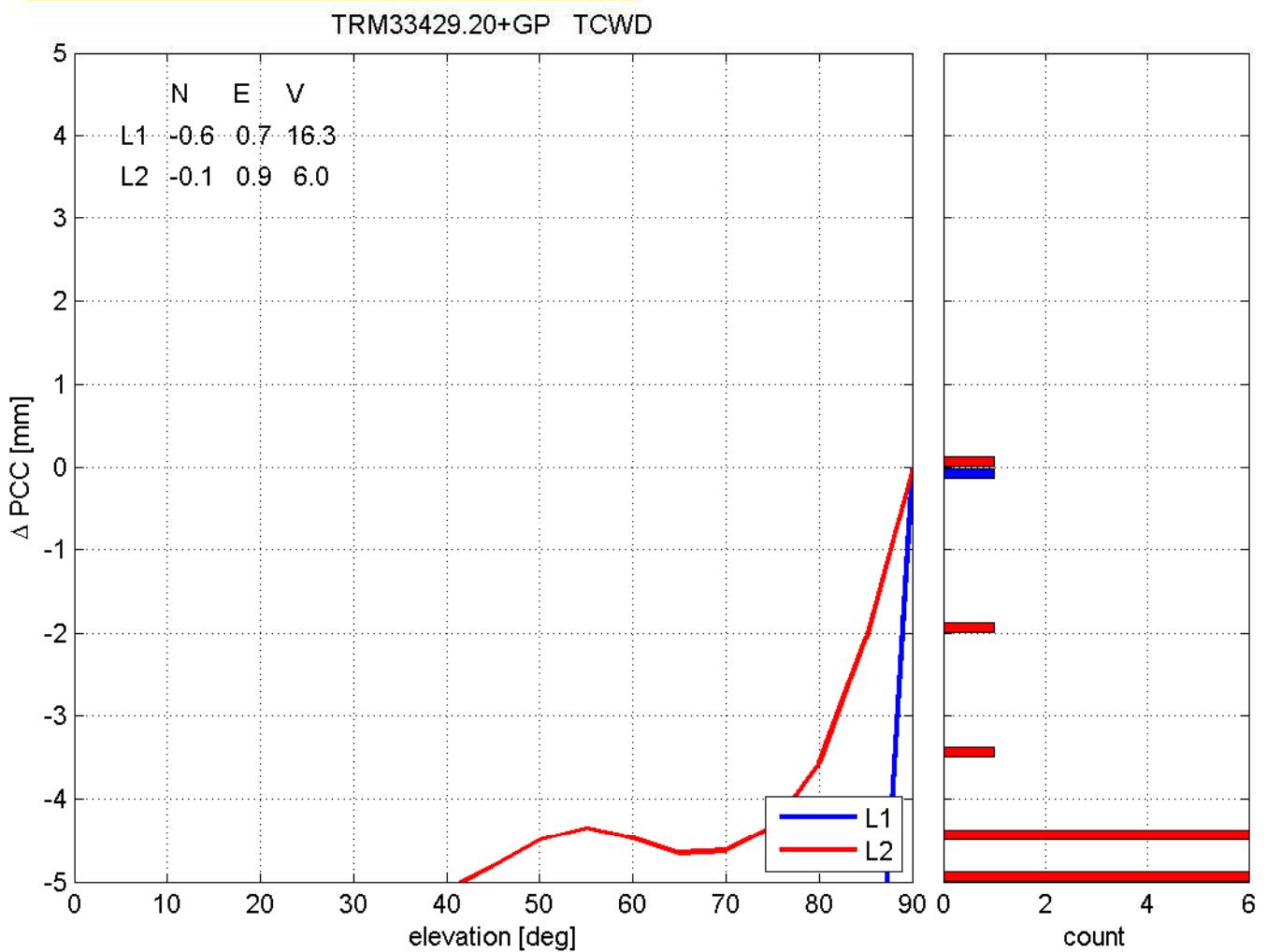
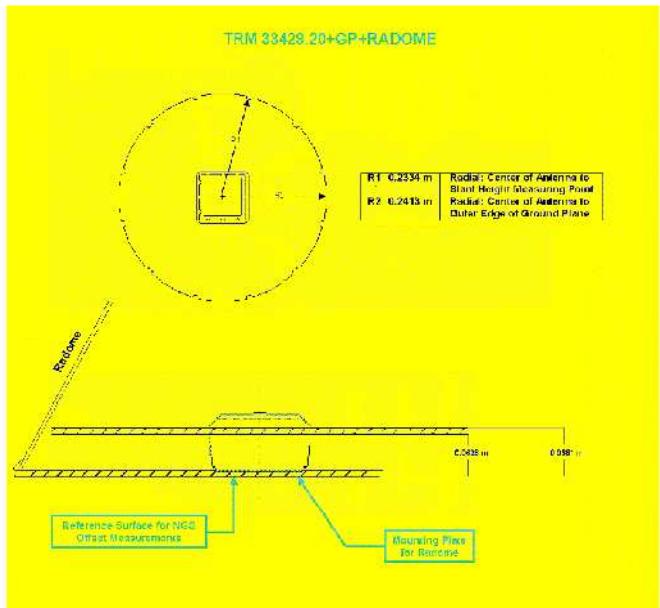
calib date:  
29-Aug-2001

patch with  
groundplane  
(+GP)



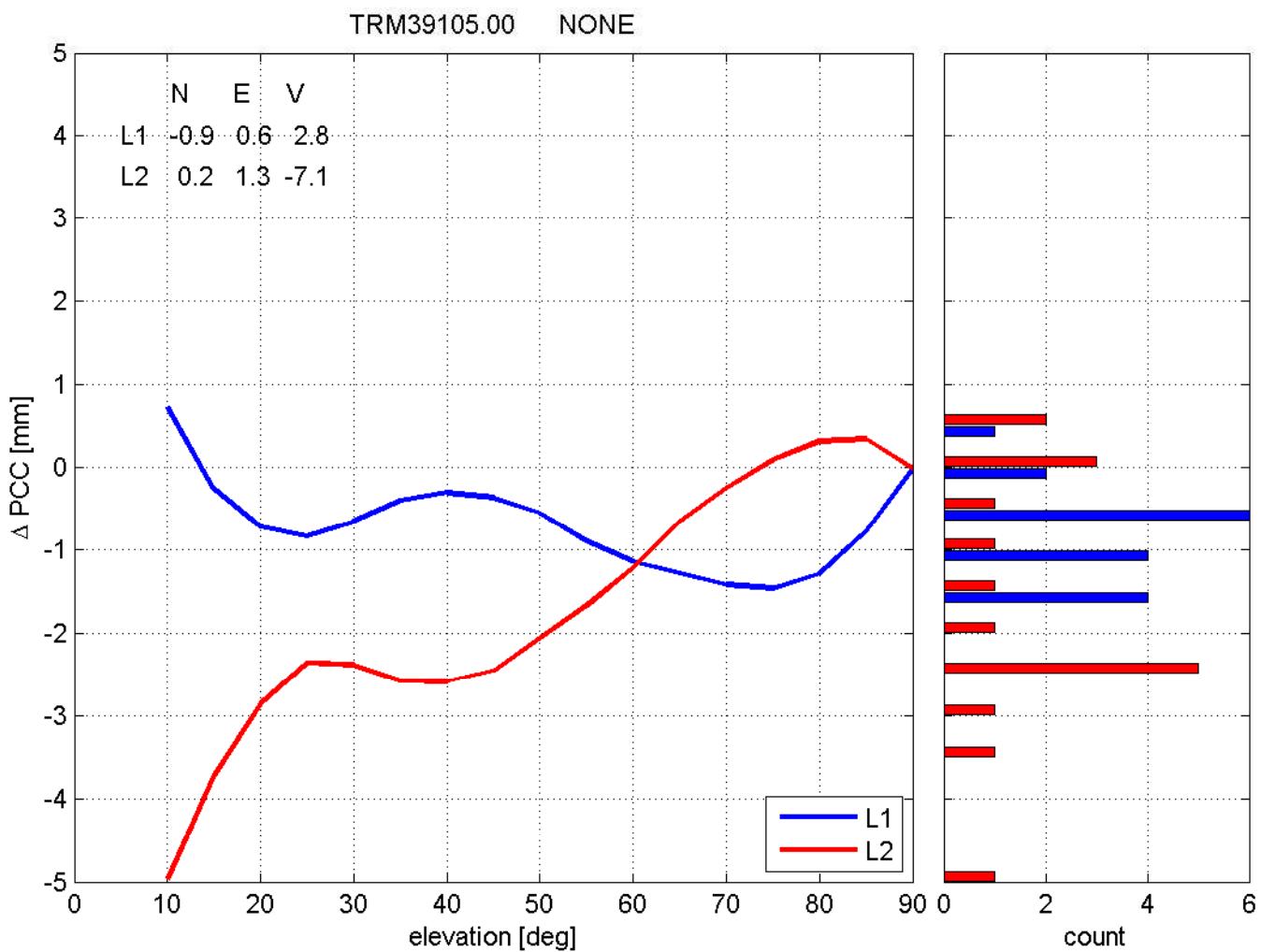
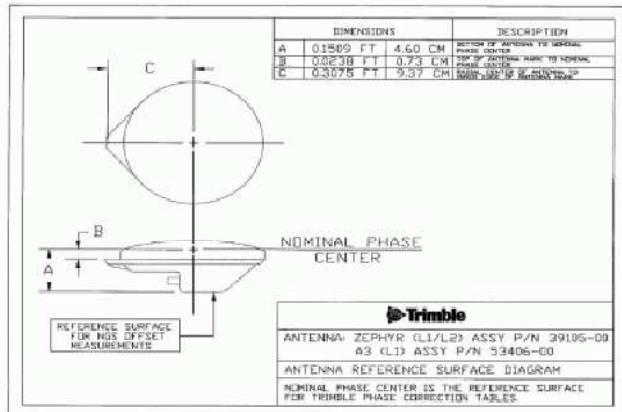
calib date:  
05-Dec-2002

patch with  
groundplane  
(+GP)



calib date:  
11-Apr-2001

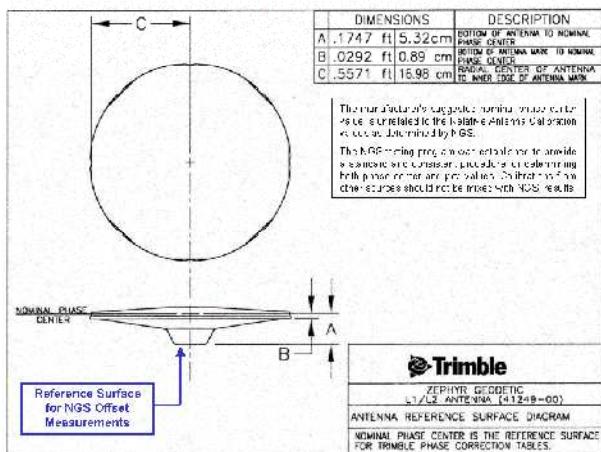
rover antenna (no  
rx)



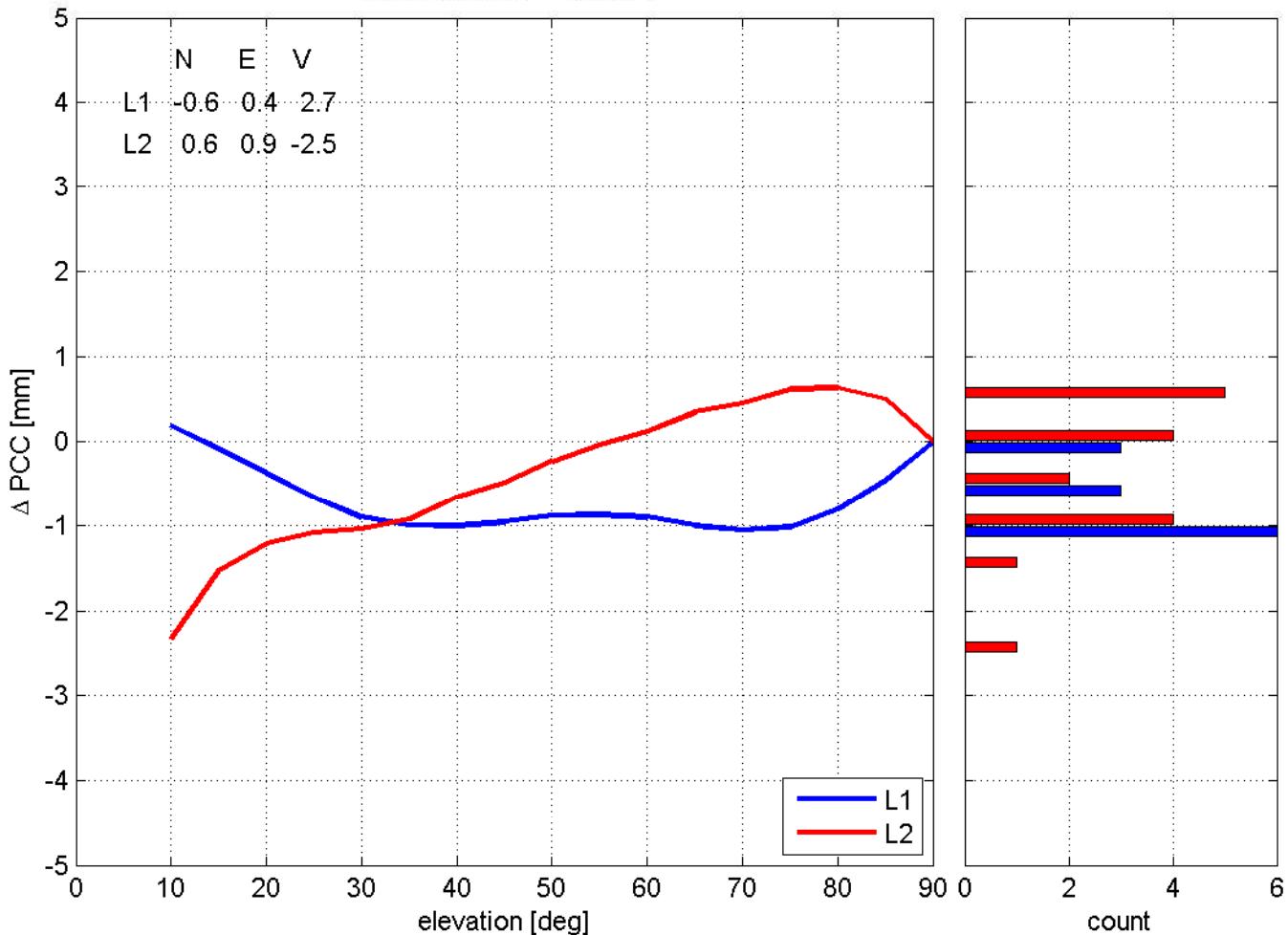
calib date:  
11-Apr-2001

geodetic with  
large groundplane

TRM 41249.00



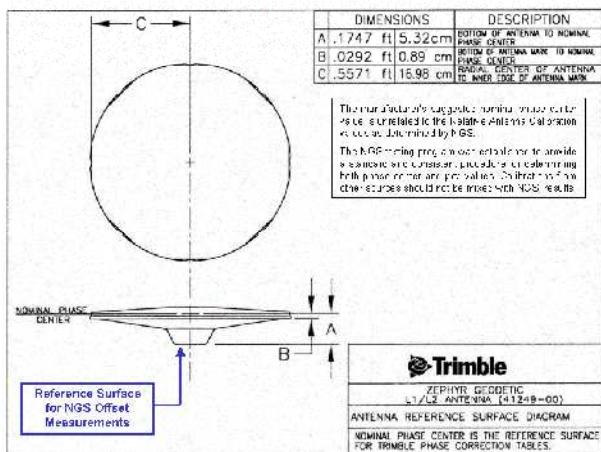
TRM41249.00 NONE



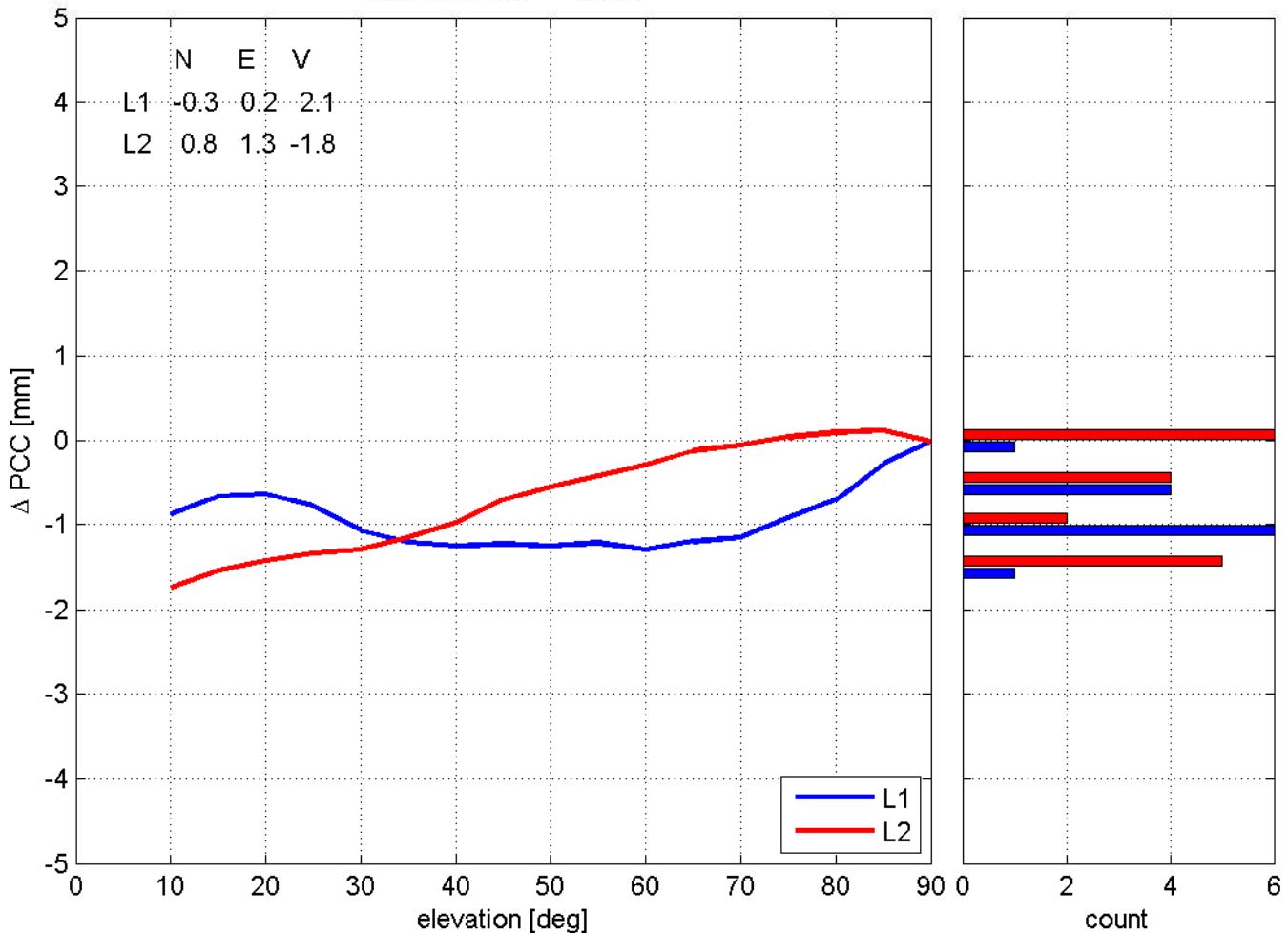
calib date:  
16-Jan-2003

geodetic with  
large groundplane

TRM 41249.00

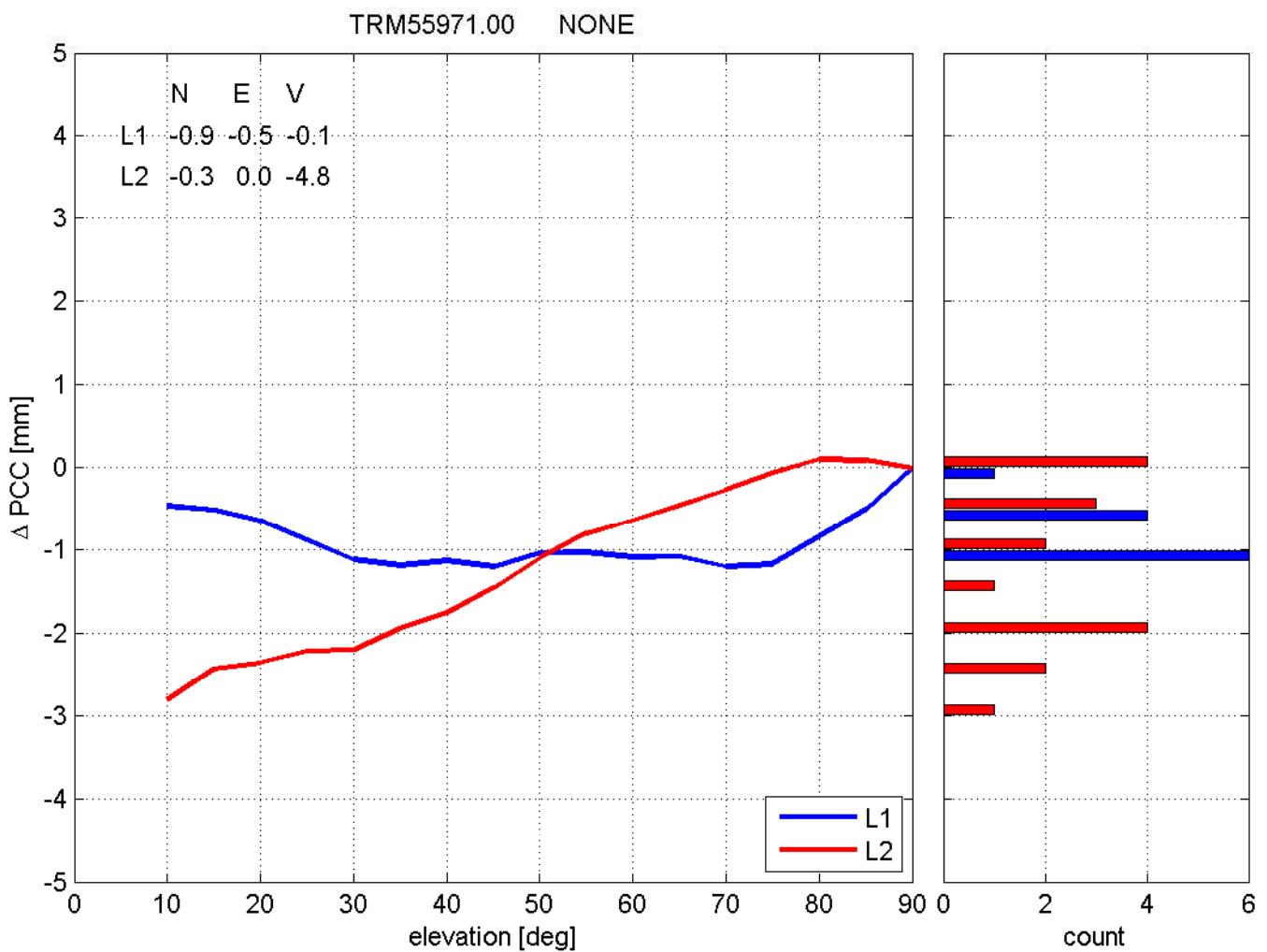
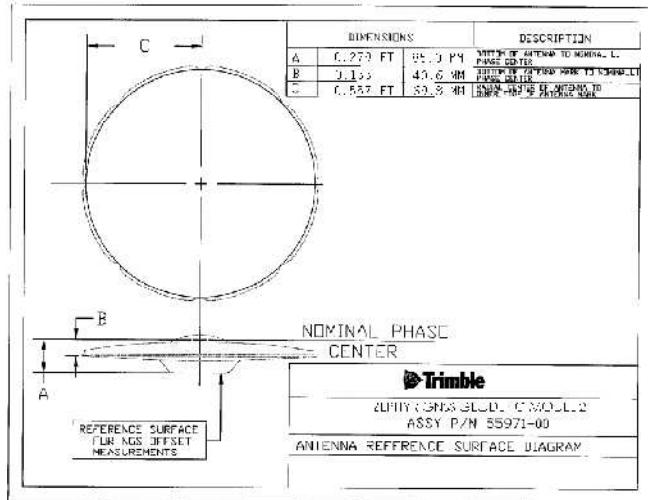


TRM41249.00 TZGD



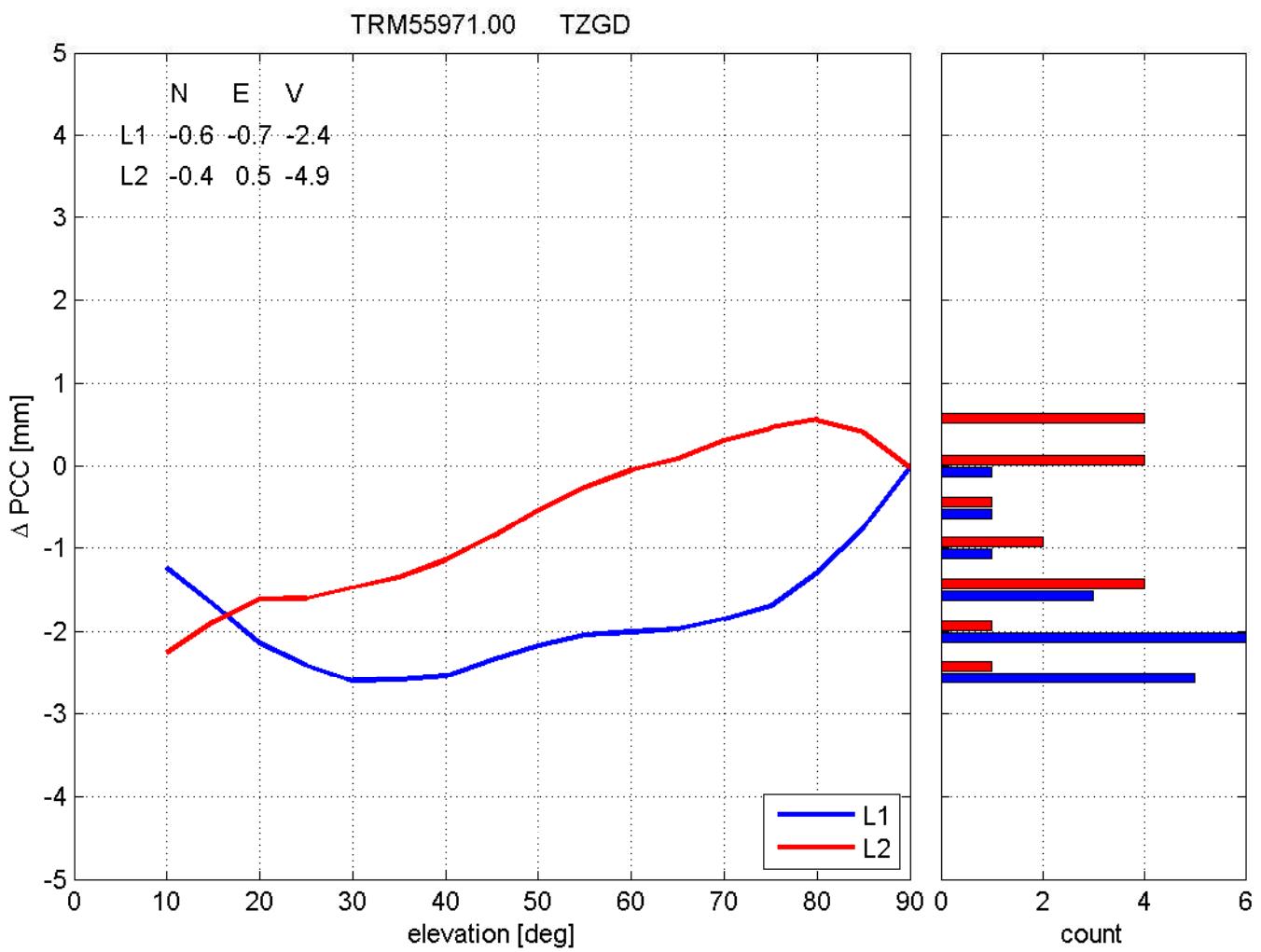
calib date:  
12-Jun-2006

geodetic with  
large groundplane



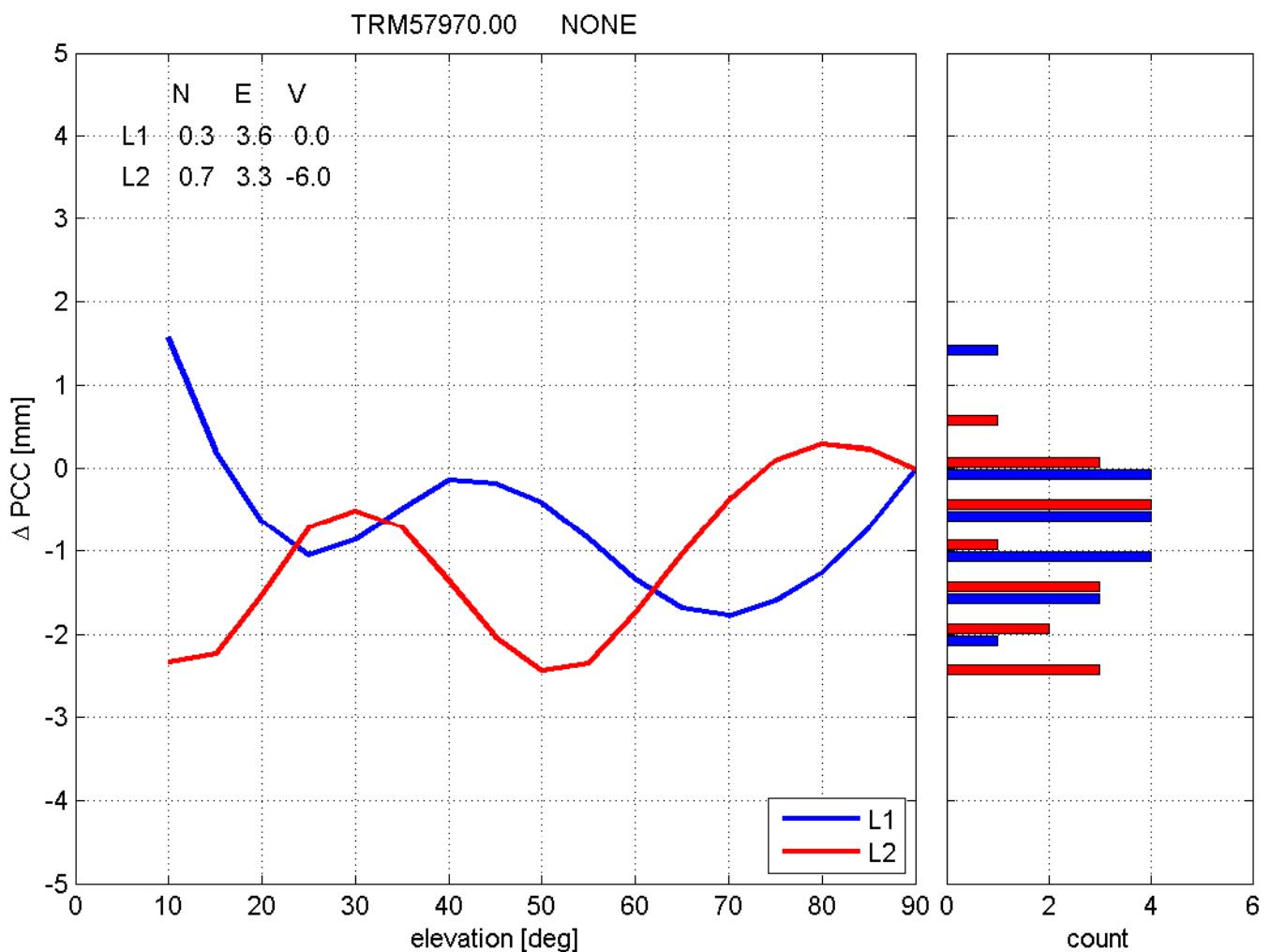
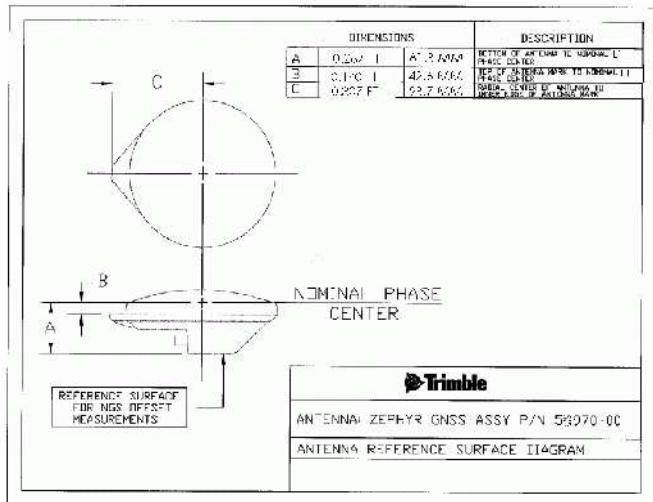
calib date:  
14-Jul-2006

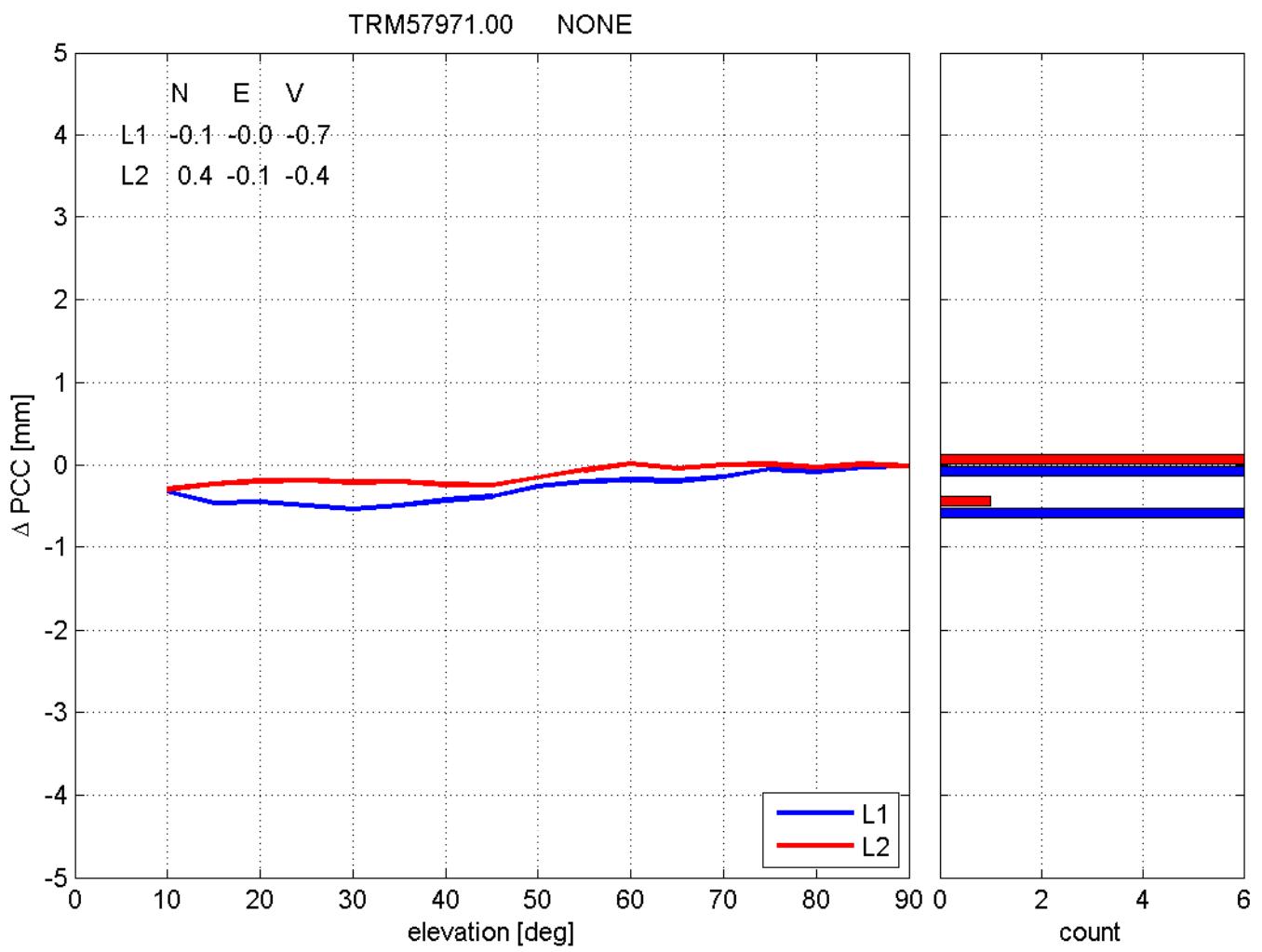
geodetic with  
large groundplane



calib date:  
31-Mar-2006

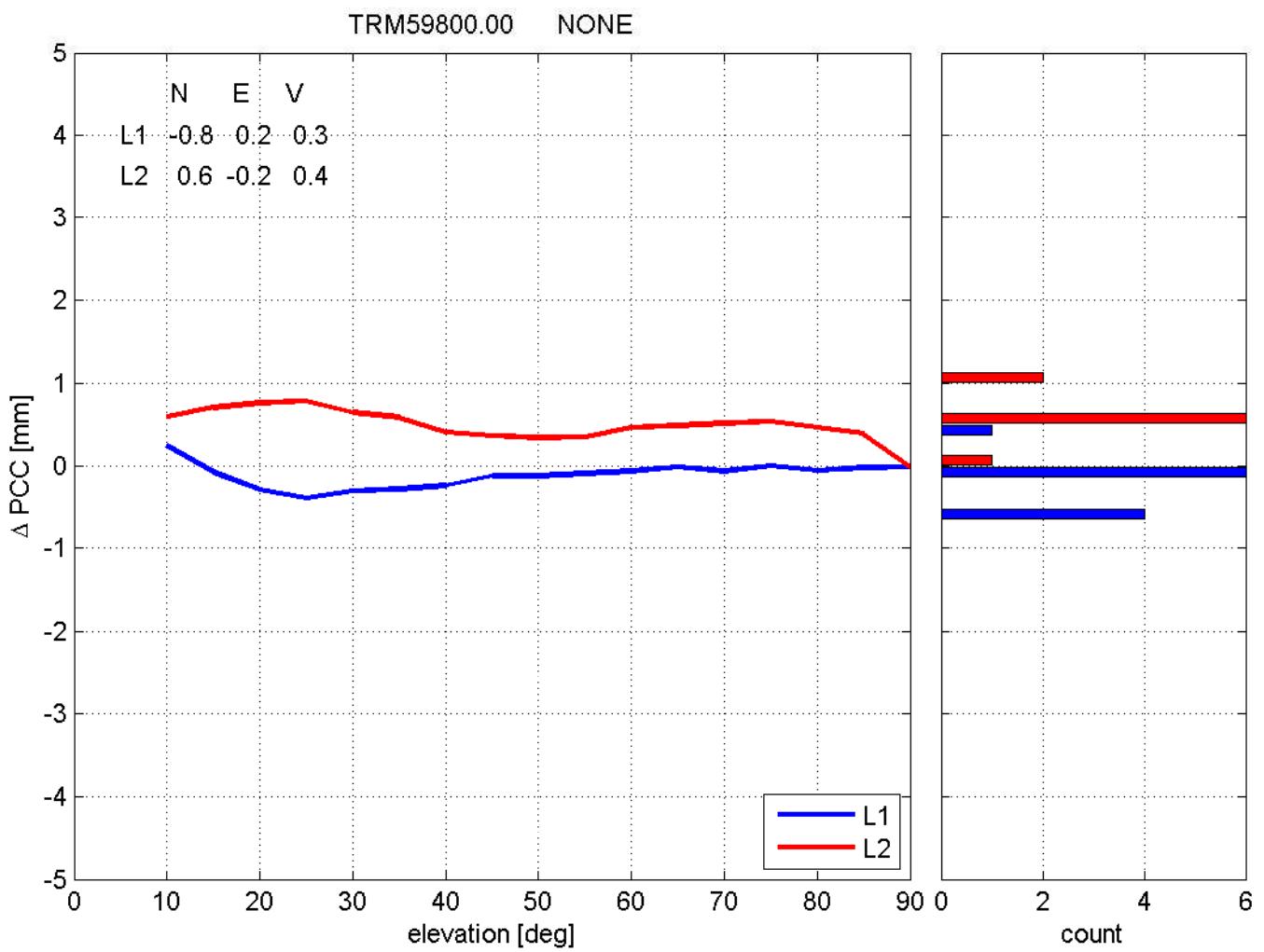
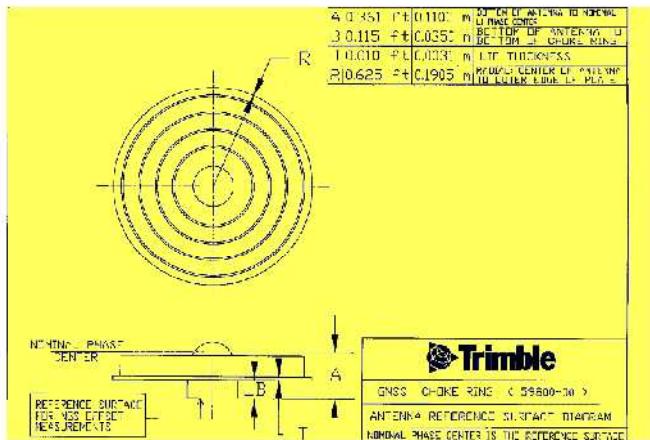
rover antenna (no  
rx)





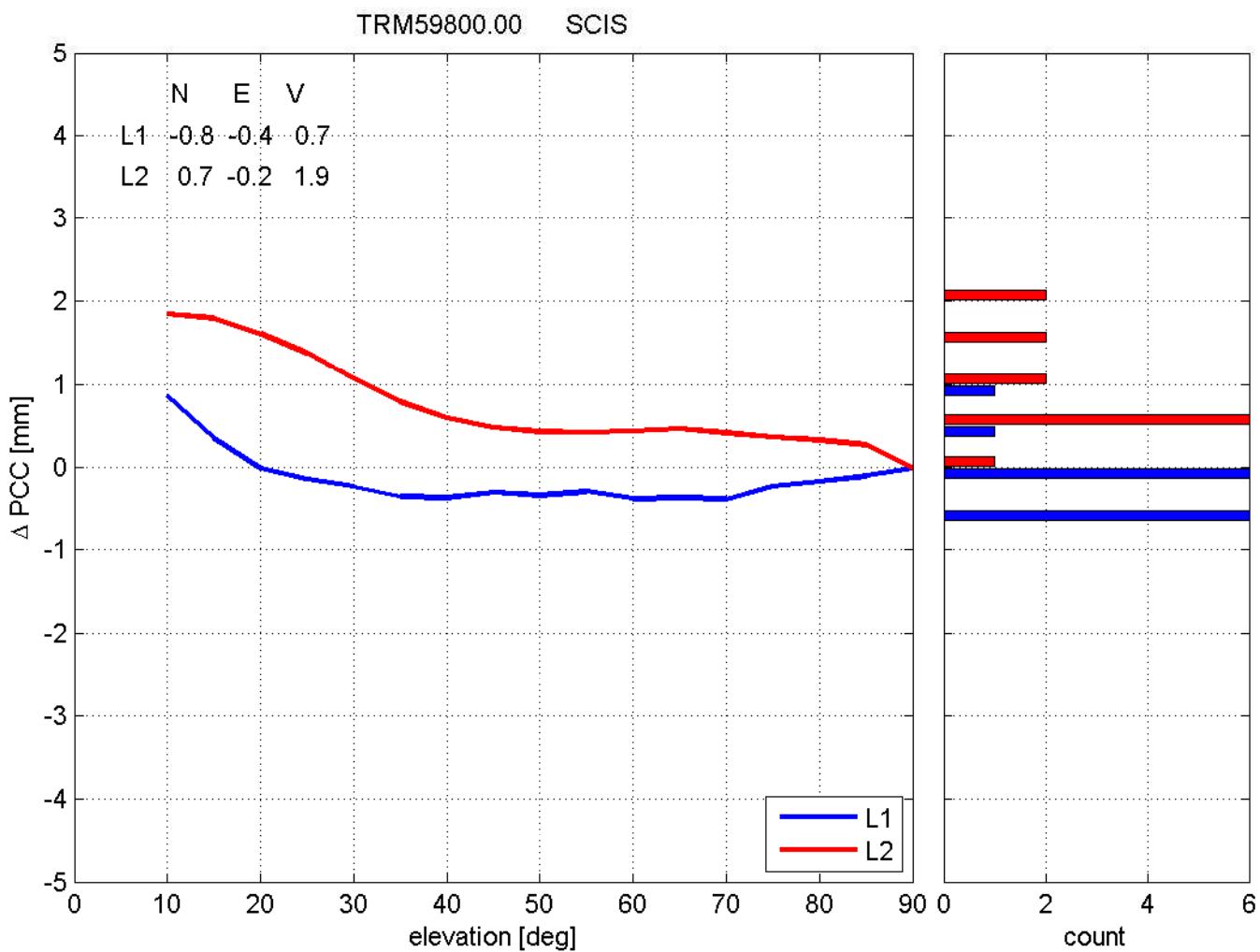
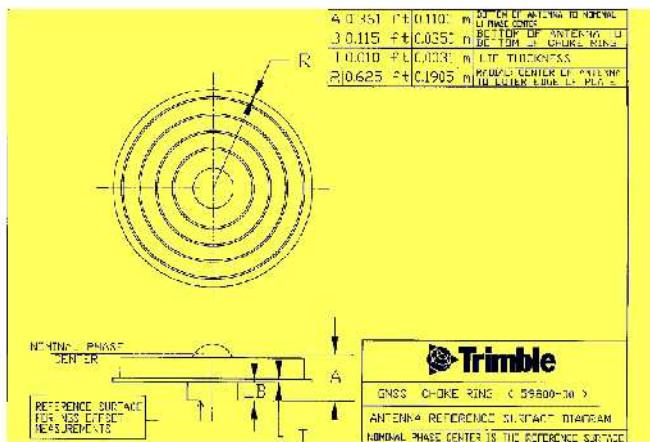
calib date:  
07-May-2008

chokering (CR)



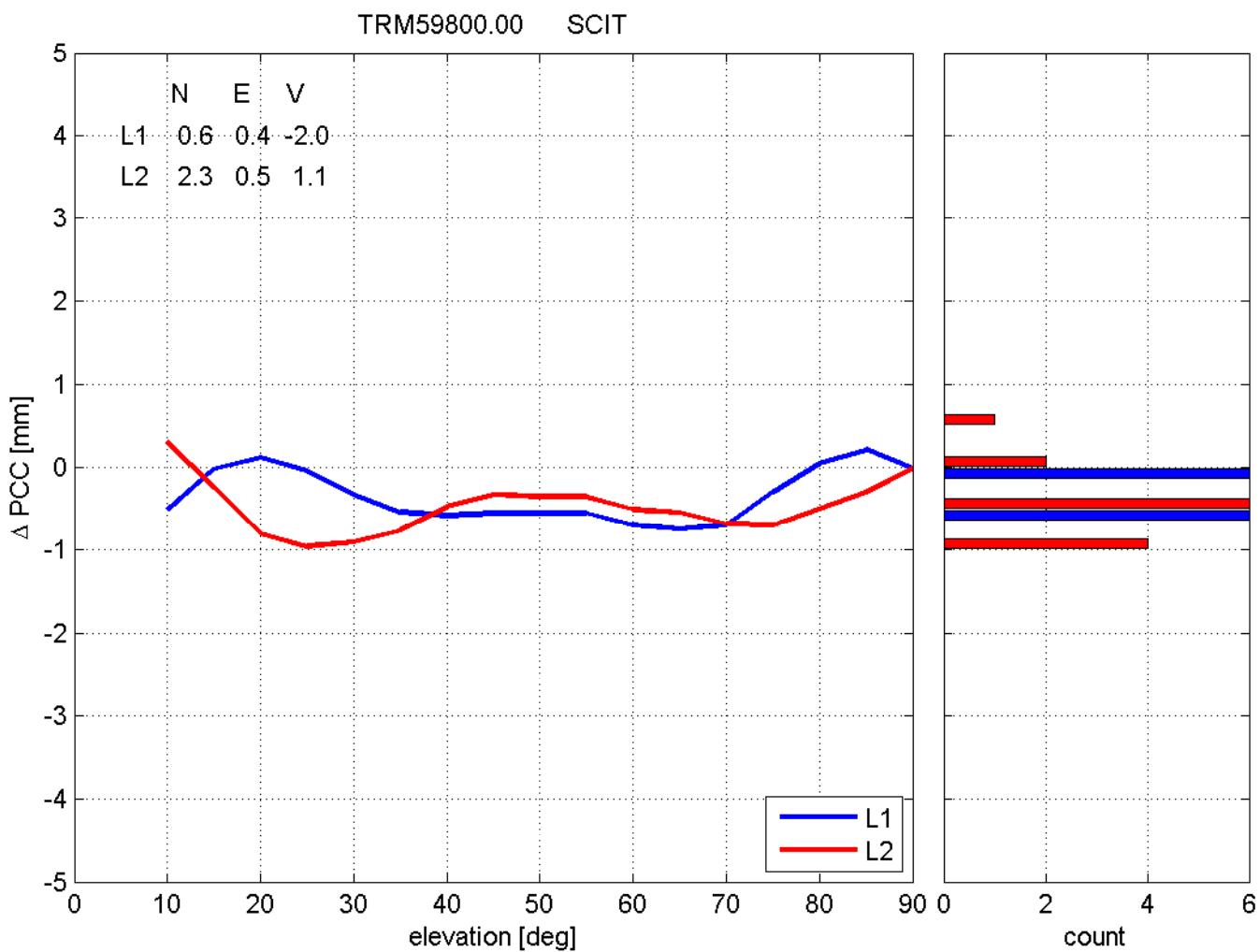
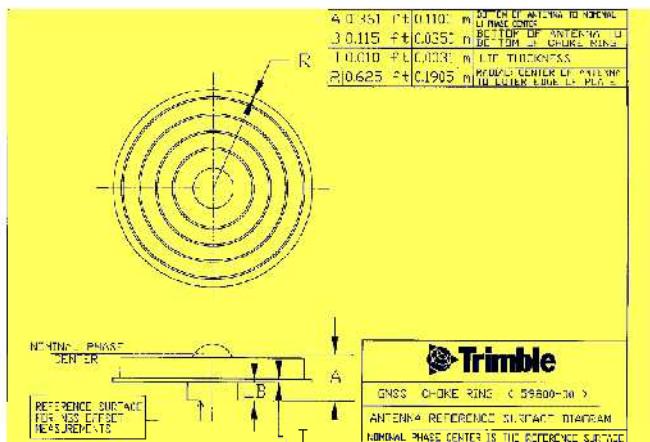
calib date:  
08-May-2008

chokering (CR)



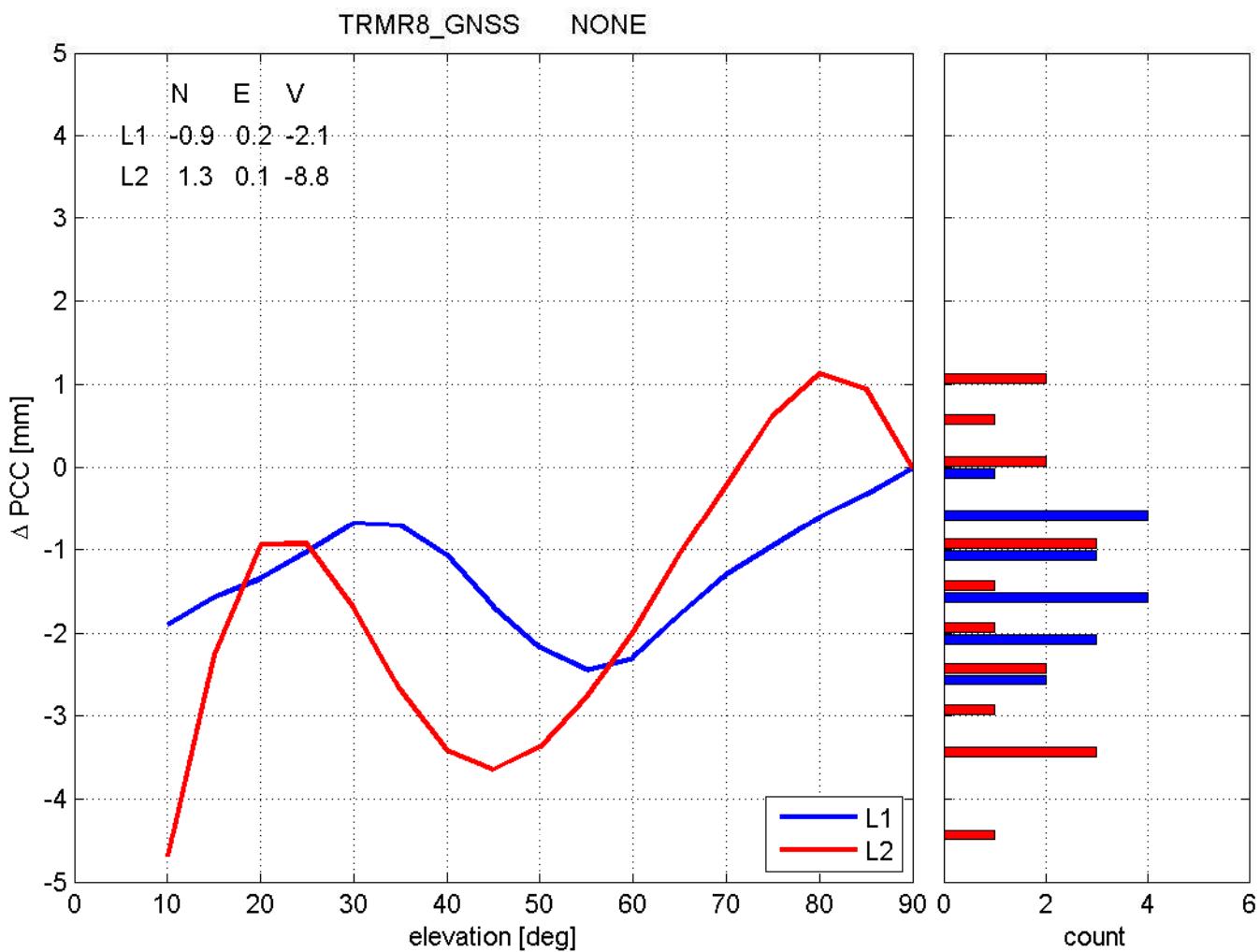
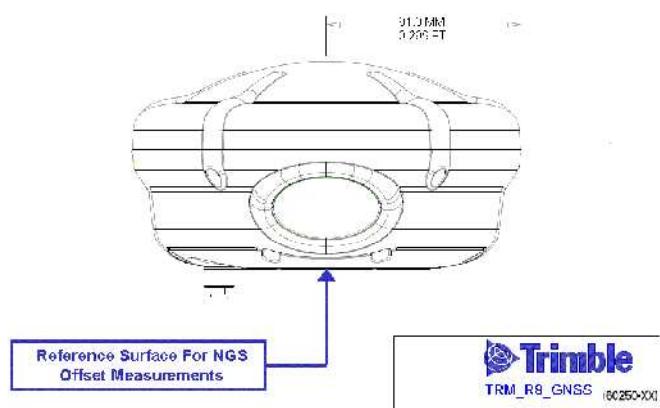
calib date:  
23-Apr-2008

chokering (CR)



calib date:  
22-May-2006

integrated  
antenna/receiver



calib date:  
22-May-2006

integrated  
antenna/receiver

