**Data Set:**

**Time: 0’**

uplink freq offset: 0.0016563 0.001537

downlink freq offset: -0.0015472

antenna 1: 1+9.7696e-20i; ampl=1; angle=9.7696e-20

antenna 2: 0.65181+0.8147i; ampl=1.0434; angle=0.89602

antenna 3: -0.37307-1.0579i; ampl=1.1217; angle=-1.9098

antenna 4: 0.78246+0.59572i; ampl=0.98342; angle=1.65072

**Time: 10’**

uplink freq offset: 0.0014317 0.0012832

downlink freq offset: -0.0014774

antenna 1: 1+1.0642e-18i; ampl=1; angle=1.0642e-18

antenna 2: 0.69638+0.75076i; ampl=1.024; angle=0.82296

antenna 3: -0.31415-1.0539i; ampl=1.0998; angle=-1.8605

antenna 4: -0.21353+0.93815i; ampl=0.96214; angle=1.7946

**Time: 20’**

uplink freq offset: 0.0015693 0.0014366

downlink freq offset: -0.001329

antenna 1: 1-1.1851e-18i; ampl=1; angle=-1.1851e-18

antenna 2: 0.73622+0.74109i; ampl=1.0446; angle=0.78869

antenna 3: -0.21289-1.0819i; ampl=1.1027; angle=-1.7651

antenna 4: -0.41297+0.858i; ampl=0.95221; angle=2.0194

**Time: 30’**

uplink freq offset: 0.0015615 0.0014924

downlink freq offset: -0.0014794

antenna 1: 1-1.8691e-18i; ampl=1; angle=-1.8691e-18

antenna 2: 0.7443+0.76679i; ampl=1.0686; angle=0.80028

antenna 3: -0.21305-1.0873i; ampl=1.108; angle=-1.7643

antenna 4: -0.53852+0.80753i; ampl=0.97062; angle=2.1589

Time: 40’

uplink freq offset: 0.0014713 0.0013113

downlink freq offset: -0.0012513

antenna 1: 1+6.3096e-19i; ampl=1; angle=6.3096e-19

antenna 2: 0.76544+0.73737i; ampl=1.0628; angle=0.76673

antenna 3: -0.25655-1.0621i; ampl=1.0927; angle=-1.8078

antenna 4: -0.4943+0.80913i; ampl=0.94817; angle=2.1192

**Time: 50’**

uplink freq offset: 0.0015293 0.0013207

downlink freq offset: -0.0014195

antenna 1: 1-2.3762e-18i; ampl=1; angle=-2.3762e-18

antenna 2: 0.72275+0.72985i; ampl=1.0272; angle=0.79029

antenna 3: -0.18772-1.0816i; ampl=1.0978; angle=-1.7426

antenna 4: -0.60964+0.73741i; ampl=0.95679; angle=2.2616

**Time: 60’**

uplink freq offset: 0.0015437 0.0014198

downlink freq offset: -0.0014454

antenna 1: 1-5.5602e-18i; ampl=1; angle=-5.5602e-18

antenna 2: 0.63464+0.78898i; ampl=1.0126; angle=0.89339

antenna 3: -0.15429-1.108i; ampl=1.1187; angle=-1.7092

antenna 4: -0.60106+0.75696i; ampl=0.96657; angle=2.2419

**Time: 70’**

uplink freq offset: 0.0015295 0.0013977

downlink freq offset: -0.0014524

antenna 1: 1-1.278e-18i; ampl=1; angle=-1.278e-18

antenna 2: 0.75861+0.74798i; ampl=1.0653; angle=0.77834

antenna 3: -0.13554-1.0868i; ampl=1.0953; angle=-1.6949

antenna 4: -0.61018+0.75141i; ampl=0.96796; angle=2.2528

**Time: 80’**

uplink freq offset: 0.001559 0.0014296

downlink freq offset: -0.001528

antenna 1: 1+5.8366e-18i; ampl=1; angle=5.8366e-18

antenna 2: 0.74464+0.74884i; ampl=1.0561; angle=0.78821

antenna 3: -0.098076-1.0951i; ampl=1.0994; angle=-1.6601

antenna 4: -0.65591+0.70311i; ampl=0.96155; angle=2.3215

**Time: 90’**

uplink freq offset: 0.0014698 0.011357

downlink freq offset: -0.0014067

antenna 1: 1-1.9932e-18i; ampl=1; angle=-1.9932e-18

antenna 2: 0.77151+0.71339i; ampl=1.0508; angle=0.74628

antenna 3: -0.18044-1.0736i; ampl=1.0887; angle=-1.7373

antenna 4: -0.57897+0.76829i; ampl=0.96202; angle=2.2166

**Time: 100’**

uplink freq offset: 0.0014111 0.0013053

downlink freq offset: -0.0012468

antenna 1: 1+1.8145e-19i; ampl=1; angle=1.8145e-19

antenna 2: 0.73448+0.67006i; ampl=0.9942; angle=0.73956

antenna 3: -0.19101-1.1064i; ampl=1.1228; angle=-1.7417

antenna 4: -0.62857+0.74765i; ampl=0.97677; angle=2.2699

**Time: 110’**

uplink freq offset: 0.0014185 0.0012743

downlink freq offset: -0.0013735

antenna 1: 1-3.4084e-18i; ampl=1; angle=-3.4084e-18

antenna 2: 0.72418+0.67937i; ampl=0.99297; angle=0.75348

antenna 3: -0.19392-1.0988i; ampl=1.1158; angle=-1.7455

antenna 4: -0.57924+0.76898i; ampl=0.96273; angle=2.2164

**Time: 120’**

uplink freq offset: 0.001437 0.0013085

downlink freq offset: -0.001286

antenna 1: 1+8.3939e-19i; ampl=1; angle=8.3939e-19

antenna 2: 0.70964+0.67199i; ampl=0.97732; angle=0.75816

antenna 3: -0.14341-1.1105i; ampl=1.1197; angle=-1.6992

antenna 4: -0.60284+0.75028i; ampl=0.96246; angle=2.2477

**Time: 150’**

uplink freq offset: 0.0015735 0.0014035

downlink freq offset: -0.0014308

antenna 1: 1+2.2672e-18i; ampl=1; angle=2.2672e-18

antenna 2: 0.71755+0.67054i; ampl=0.98209; angle=0.75154

antenna 3: -0.1049-1.1227i; ampl=1.1276; angle=-1.664

antenna 4: -0.57988+0.74568i; ampl=0.94462; angle=2.2318

**Time: 180’**

uplink freq offset: 0.0016644 0.0019069

downlink freq offset: -0.0014217

antenna 1: 1+2.2138e-18i; ampl=1; angle=2.2138e-18

antenna 2: 0.75326+0.64803i; ampl=0.99365; angle=0.71044

antenna 3: -0.13109-1.1243i; ampl=1.1319; angle=-1.6869

antenna 4: -0.6166+0.76145i; ampl=0.9698; angle=2.2515

**Time: 210’**

uplink freq offset: 0.0016283 0.0014708

downlink freq offset: -0.0014168

antenna 1: 1-1.6148e-18i; ampl=1; angle=-1.6148e-18

antenna 2: 0.80069+0.58389i; ampl=0.99098; angle=0.63008

antenna 3: -0.17953-1.1075i; ampl=1.122; angle=-1.7315

antenna 4: -0.64713+0.72017i; ampl=0.96821; angle=2.3028

**Time: 240’**

uplink freq offset: 0.0013928 0.0012891

downlink freq offset: -0.0013431

antenna 1: 1+1.3134e-18i; ampl=1; angle=1.3134e-18

antenna 2: 0.79393+0.58237i; ampl=0.98462; angle=0.63287

antenna 3: -0.27763-1.0529i; ampl=1.0888; angle=-1.8286

antenna 4: -0.65131+0.68982i; ampl=0.94871; angle=2.3275

**Time: 270’**

uplink freq offset: 0.0014371 0.001304

downlink freq offset: -0.0014814

antenna 1: 1+6.816e-19i; ampl=1; angle=6.816e-19

antenna 2: 0.83566+0.51785i; ampl=0.98311; angle=0.55477

antenna 3: -0.31694-1.0717i; ampl=1.1176; angle=-1.8583

antenna 4: -0.6909+0.68003i; ampl=0.96943; angle=2.3641

**Time: 300’**

uplink freq offset: 0.0014951 0.0014104

downlink freq offset: -0.0014285

antenna 1: 1+8.5182e-19i; ampl=1; angle=8.5182e-19

antenna 2: 0.84145+0.50398i; ampl=0.98084; angle=0.53964

antenna 3: -0.31738-1.0633i; ampl=1.1097; angle=-1.8609

antenna 4: -0.6931+0.673i; ampl=0.96609; angle=2.3709

**Time: 330’**

uplink freq offset: 0.0013512 0.0011966

downlink freq offset: -0.0013575

antenna 1: 1-2.7617e-19i; ampl=1; angle=-2.7617e-19

antenna 2: 0.85892+0.48263i; ampl=0.98523; angle=0.51193

antenna 3: -0.30298-1.0758i; ampl=1.1176; angle=-1.8453

antenna 4: -0.73289+0.61266i; ampl=0.95524; angle=2.4453

**Time: 360’**

uplink freq offset: 0.0013918 0.0012137

downlink freq offset: -0.0013633

antenna 1: 1+5.4759e-18i; ampl=1; angle=5.4759e-18

antenna 2: 0.86099+0.50632i; ampl=0.99883; angle=0.5316

antenna 3: -0.27533-1.0946i; ampl=1.1287; angle=-1.8172

antenna 4: -0.73767+0.60403i; ampl=0.95342; angle=2.4555

**Time: 390’**

uplink freq offset: 0.0015864 0.0022203

downlink freq offset: -0.0014309

antenna 1: 1-3.6831e-18i; ampl=1; angle=-3.6831e-18

antenna 2: 0.83066+0.49167i; ampl=0.96526; angle=0.53445

antenna 3: -0.23522-1.0813i; ampl=1.1066; angle=-1.785

antenna 4: -0.7536+0.53699i; ampl=0.94715; angle=2.4051

**Time: 420’**

uplink freq offset: 0.0013931 0.0012375

downlink freq offset: -0.0012437

antenna 1: 1+1.8332e-18i; ampl=1; angle=1.8332e-18

antenna 2: 0.84268+0.47463i; ampl=0.96715; angle=0.51295

antenna 3: -0.32503-1.0664i; ampl=1.1148; angle=-1.8666

antenna 4: -0.76321+0.58446i; ampl=0.96129; angle=2.4881

**Time:0-420min (7 hours)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parameter |  |  |  |  |  |  |
| Variance | 0.014984 | 0.005236 | 0.0384566 | 0.00116681 | 0.000017107 | 0.000009591 |

**Time:70-420min (last 6 hours)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parameter |  |  |  |  |  |  |
| Variance | 0.011736249 | 0.005412335 | 0.00803053 | 0.000095760 | 0.000018789 | 0.000008211 |











