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## TFD Array Beam Steering

Time Delay Cable VoP: **66%**      Array elements N-S baseline spacing (feet): **32**  
 Array elements E-W baseline spacing (feet): **32**

| N-S Offset<br>(degrees) | E-W Offset<br>(degrees) | Delay Cable Lengths (feet & inches) |               |           |               |           | AZ<br>(degrees) | EL<br>(degrees) |
|-------------------------|-------------------------|-------------------------------------|---------------|-----------|---------------|-----------|-----------------|-----------------|
|                         |                         | A (S) / B (N)                       | C (S) / D (N) | E         | F (W) / G (E) | H         |                 |                 |
| 20 N                    | 60 E                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 18' 3-1/2"    | 9' 1-3/4" | 78              | 29              |
| 20 N                    | 45 E                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 14' 11-1/4"   | 7' 5-1/2" | 70              | 43              |
| 20 N                    | 30 E                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 10' 6-3/4"    | 5' 3-1/4" | 58              | 56              |
| 20 N                    | 15 E                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 5' 5-1/2"     | 2' 8-3/4" | 36              | 66              |
| 20 N                    | 0                       | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 0"            | 0"        | 0               | 70              |
| 20 N                    | 15 W                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 5' 5-1/2"     | 2' 8-3/4" | 324             | 66              |
| 20 N                    | 30 W                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 10' 6-3/4"    | 5' 3-1/4" | 302             | 56              |
| 20 N                    | 45 W                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 14' 11-1/4"   | 7' 5-1/2" | 290             | 43              |
| 20 N                    | 60 W                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 18' 3-1/2"    | 9' 1-3/4" | 282             | 29              |
| <hr/>                   |                         |                                     |               |           |               |           |                 |                 |
| 15 N                    | 60 E                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 18' 3-1/2"    | 9' 1-3/4" | 81              | 30              |
| 15 N                    | 45 E                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 14' 11-1/4"   | 7' 5-1/2" | 105             | 44              |
| 15 N                    | 30 E                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 10' 6-3/4"    | 5' 3-1/4" | 115             | 58              |
| 15 N                    | 15 E                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 5' 5-1/2"     | 2' 8-3/4" | 135             | 69              |
| 15 N                    | 0                       | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 0"            | 0"        | 180             | 75              |
| 15 N                    | 15 W                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 5' 5-1/2"     | 2' 8-3/4" | 225             | 69              |
| 15 N                    | 30 W                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 10' 6-3/4"    | 5' 3-1/4" | 245             | 58              |
| 15 N                    | 45 W                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 14' 11-1/4"   | 7' 5-1/2" | 255             | 44              |
| 15 N                    | 60 W                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 18' 3-1/2"    | 9' 1-3/4" | 261             | 30              |
| <hr/>                   |                         |                                     |               |           |               |           |                 |                 |
| 10 N                    | 60 E                    | 3' 8"                               | 7' 4"         | 1' 10"    | 18' 3-1/2"    | 9' 1-3/4" | 96              | 30              |
| 10 N                    | 45 E                    | 3' 8"                               | 7' 4"         | 1' 10"    | 14' 11-1/4"   | 7' 5-1/2" | 100             | 45              |
| 10 N                    | 30 E                    | 3' 8"                               | 7' 4"         | 1' 10"    | 10' 6-3/4"    | 5' 3-1/4" | 107             | 59              |
| 10 N                    | 15 E                    | 3' 8"                               | 7' 4"         | 1' 10"    | 5' 5-1/2"     | 2' 8-3/4" | 123             | 72              |
| 10 N                    | 0                       | 3' 8"                               | 7' 4"         | 1' 10"    | 0"            | 0"        | 180             | 80              |
| 10 N                    | 15 W                    | 3' 8"                               | 7' 4"         | 1' 10"    | 5' 5-1/2"     | 2' 8-3/4" | 237             | 72              |
| 10 N                    | 30 W                    | 3' 8"                               | 7' 4"         | 1' 10"    | 10' 6-3/4"    | 5' 3-1/4" | 253             | 59              |
| 10 N                    | 45 W                    | 3' 8"                               | 7' 4"         | 1' 10"    | 14' 11-1/4"   | 7' 5-1/2" | 260             | 45              |
| 10 N                    | 60 W                    | 3' 8"                               | 7' 4"         | 1' 10"    | 18' 3-1/2"    | 9' 1-3/4" | 264             | 30              |

**AJ4CO**  
OBSERVATORY

### AJ4CO Observatory Diagram

|               |                           |                           |     |
|---------------|---------------------------|---------------------------|-----|
| SIZE<br>A     | DATE<br>01 OCT 2014       | PART NUMBER<br><b>N/A</b> | REV |
| SCALE<br>NONE | DRAWN BY<br>DAVE TYPINSKI | SHEET 2A OF 5             |     |

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## TFD Array Beam Steering

Time Delay Cable VoP: **66%**      Array elements N-S baseline spacing (feet): **32**  
 Array elements E-W baseline spacing (feet): **32**

| N-S Offset<br>(degrees) | E-W Offset<br>(degrees) | Delay Cable Lengths (feet & inches) |               |     |               |           | AZ<br>(degrees) | EL<br>(degrees) |
|-------------------------|-------------------------|-------------------------------------|---------------|-----|---------------|-----------|-----------------|-----------------|
|                         |                         | A (S) / B (N)                       | C (S) / D (N) | E   | F (W) / G (E) | H         |                 |                 |
| 5 N                     | 60 E                    | 1' 10"                              | 3' 8-1/4"     | 11" | 18' 3-1/2"    | 9' 1-3/4" | 87              | 30              |
| 5 N                     | 45 E                    | 1' 10"                              | 3' 8-1/4"     | 11" | 14' 11-1/4"   | 7' 5-1/2" | 85              | 45              |
| 5 N                     | 30 E                    | 1' 10"                              | 3' 8-1/4"     | 11" | 10' 6-3/4"    | 5' 3-1/4" | 81              | 60              |
| 5 N                     | 15 E                    | 1' 10"                              | 3' 8-1/4"     | 11" | 5' 5-1/2"     | 2' 8-3/4" | 72              | 74              |
| 5 N                     | 0                       | 1' 10"                              | 3' 8-1/4"     | 11" | 0"            | 0"        | 360             | 85              |
| 5 N                     | 15 W                    | 1' 10"                              | 3' 8-1/4"     | 11" | 5' 5-1/2"     | 2' 8-3/4" | 288             | 74              |
| 5 N                     | 30 W                    | 1' 10"                              | 3' 8-1/4"     | 11" | 10' 6-3/4"    | 5' 3-1/4" | 279             | 60              |
| 5 N                     | 45 W                    | 1' 10"                              | 3' 8-1/4"     | 11" | 14' 11-1/4"   | 7' 5-1/2" | 275             | 45              |
| 5 N                     | 60 W                    | 1' 10"                              | 3' 8-1/4"     | 11" | 18' 3-1/2"    | 9' 1-3/4" | 273             | 30              |
| <hr/>                   |                         |                                     |               |     |               |           |                 |                 |
| 0                       | 60 E                    | 0"                                  | 0"            | 0"  | 18' 3-1/2"    | 9' 1-3/4" | 90              | 30              |
| 0                       | 45 E                    | 0"                                  | 0"            | 0"  | 14' 11-1/4"   | 7' 5-1/2" | 90              | 45              |
| 0                       | 30 E                    | 0"                                  | 0"            | 0"  | 10' 6-3/4"    | 5' 3-1/4" | 90              | 60              |
| 0                       | 15 E                    | 0"                                  | 0"            | 0"  | 5' 5-1/2"     | 2' 8-3/4" | 90              | 75              |
| 0                       | 0                       | 0"                                  | 0"            | 0"  | 0"            | 0"        | 180             | 90              |
| 0                       | 15 W                    | 0"                                  | 0"            | 0"  | 5' 5-1/2"     | 2' 8-3/4" | 270             | 75              |
| 0                       | 30 W                    | 0"                                  | 0"            | 0"  | 10' 6-3/4"    | 5' 3-1/4" | 270             | 60              |
| 0                       | 45 W                    | 0"                                  | 0"            | 0"  | 14' 11-1/4"   | 7' 5-1/2" | 270             | 45              |
| 0                       | 60 W                    | 0"                                  | 0"            | 0"  | 18' 3-1/2"    | 9' 1-3/4" | 270             | 30              |
| <hr/>                   |                         |                                     |               |     |               |           |                 |                 |
| 5 S                     | 60 E                    | 1' 10"                              | 3' 8-1/4"     | 11" | 18' 3-1/2"    | 9' 1-3/4" | 93              | 30              |
| 5 S                     | 45 E                    | 1' 10"                              | 3' 8-1/4"     | 11" | 14' 11-1/4"   | 7' 5-1/2" | 95              | 45              |
| 5 S                     | 30 E                    | 1' 10"                              | 3' 8-1/4"     | 11" | 10' 6-3/4"    | 5' 3-1/4" | 99              | 60              |
| 5 S                     | 15 E                    | 1' 10"                              | 3' 8-1/4"     | 11" | 5' 5-1/2"     | 2' 8-3/4" | 108             | 74              |
| 5 S                     | 0                       | 1' 10"                              | 3' 8-1/4"     | 11" | 0"            | 0"        | 180             | 85              |
| 5 S                     | 15 W                    | 1' 10"                              | 3' 8-1/4"     | 11" | 5' 5-1/2"     | 2' 8-3/4" | 252             | 74              |
| 5 S                     | 30 W                    | 1' 10"                              | 3' 8-1/4"     | 11" | 10' 6-3/4"    | 5' 3-1/4" | 261             | 60              |
| 5 S                     | 45 W                    | 1' 10"                              | 3' 8-1/4"     | 11" | 14' 11-1/4"   | 7' 5-1/2" | 265             | 45              |
| 5 S                     | 60 W                    | 1' 10"                              | 3' 8-1/4"     | 11" | 18' 3-1/2"    | 9' 1-3/4" | 267             | 30              |

**AJ4CO**  
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### AJ4CO Observatory Diagram

|               |                           |                           |     |
|---------------|---------------------------|---------------------------|-----|
| SIZE<br>A     | DATE<br>01 OCT 2014       | PART NUMBER<br><b>N/A</b> | REV |
| SCALE<br>NONE | DRAWN BY<br>DAVE TYPINSKI | SHEET<br>2B OF 5          |     |

## TFD Array Beam Steering

**Time Delay Cable VoP: 66%**      **Array elements N-S baseline spacing (feet): 32**  
**Array elements E-W baseline spacing (feet): 32**

| N-S Offset<br>(degrees) | E-W Offset<br>(degrees) | Delay Cable Lengths (feet & inches) |               |           |               |           | AZ<br>(degrees) | EL<br>(degrees) |
|-------------------------|-------------------------|-------------------------------------|---------------|-----------|---------------|-----------|-----------------|-----------------|
|                         |                         | A (S) / B (N)                       | C (S) / D (N) | E         | F (W) / G (E) | H         |                 |                 |
| 10 S                    | 60 E                    | 3' 8"                               | 7' 4"         | 1' 10"    | 18' 3-1/2"    | 9' 1-3/4" | 96              | 30              |
| 10 S                    | 45 E                    | 3' 8"                               | 7' 4"         | 1' 10"    | 14' 11-1/4"   | 7' 5-1/2" | 100             | 45              |
| 10 S                    | 30 E                    | 3' 8"                               | 7' 4"         | 1' 10"    | 10' 6-3/4"    | 5' 3-1/4" | 107             | 59              |
| 10 S                    | 15 E                    | 3' 8"                               | 7' 4"         | 1' 10"    | 5' 5-1/2"     | 2' 8-3/4" | 123             | 72              |
| 10 S                    | 0                       | 3' 8"                               | 7' 4"         | 1' 10"    | 0"            | 0"        | 180             | 80              |
| 10 S                    | 15 W                    | 3' 8"                               | 7' 4"         | 1' 10"    | 5' 5-1/2"     | 2' 8-3/4" | 237             | 72              |
| 10 S                    | 30 W                    | 3' 8"                               | 7' 4"         | 1' 10"    | 10' 6-3/4"    | 5' 3-1/4" | 253             | 59              |
| 10 S                    | 45 W                    | 3' 8"                               | 7' 4"         | 1' 10"    | 14' 11-1/4"   | 7' 5-1/2" | 260             | 45              |
| 10 S                    | 60 W                    | 3' 8"                               | 7' 4"         | 1' 10"    | 18' 3-1/2"    | 9' 1-3/4" | 264             | 30              |
| <hr/>                   |                         |                                     |               |           |               |           |                 |                 |
| 15 S                    | 60 E                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 18' 3-1/2"    | 9' 1-3/4" | 99              | 30              |
| 15 S                    | 45 E                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 14' 11-1/4"   | 7' 5-1/2" | 105             | 44              |
| 15 S                    | 30 E                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 10' 6-3/4"    | 5' 3-1/4" | 115             | 58              |
| 15 S                    | 15 E                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 5' 5-1/2"     | 2' 8-3/4" | 135             | 69              |
| 15 S                    | 0                       | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 0"            | 0"        | 180             | 75              |
| 15 S                    | 15 W                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 5' 5-1/2"     | 2' 8-3/4" | 225             | 69              |
| 15 S                    | 30 W                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 10' 6-3/4"    | 5' 3-1/4" | 245             | 58              |
| 15 S                    | 45 W                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 14' 11-1/4"   | 7' 5-1/2" | 255             | 44              |
| 15 S                    | 60 W                    | 5' 5-1/2"                           | 10' 11-1/4"   | 2' 8-3/4" | 18' 3-1/2"    | 9' 1-3/4" | 261             | 30              |
| <hr/>                   |                         |                                     |               |           |               |           |                 |                 |
| 20 S                    | 60 E                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 18' 3-1/2"    | 9' 1-3/4" | 102             | 29              |
| 20 S                    | 45 E                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 14' 11-1/4"   | 7' 5-1/2" | 110             | 43              |
| 20 S                    | 30 E                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 10' 6-3/4"    | 5' 3-1/4" | 122             | 56              |
| 20 S                    | 15 E                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 5' 5-1/2"     | 2' 8-3/4" | 144             | 66              |
| 20 S                    | 0                       | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 0"            | 0"        | 180             | 70              |
| 20 S                    | 15 W                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 5' 5-1/2"     | 2' 8-3/4" | 216             | 66              |
| 20 S                    | 30 W                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 10' 6-3/4"    | 5' 3-1/4" | 238             | 56              |
| 20 S                    | 45 W                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 14' 11-1/4"   | 7' 5-1/2" | 250             | 43              |
| 20 S                    | 60 W                    | 7' 2-3/4"                           | 14' 5-1/4"    | 3' 7-1/4" | 18' 3-1/2"    | 9' 1-3/4" | 258             | 29              |

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OBSERVATORY

### AJ4CO Observatory Diagram

|               |                           |                    |     |
|---------------|---------------------------|--------------------|-----|
| SIZE<br>A     | DATE<br>01 OCT 2014       | PART NUMBER<br>N/A | REV |
| SCALE<br>NONE | DRAWN BY<br>DAVE TYPINSKI | SHEET<br>2C OF 5   |     |

## TFD Array Beam Steering

Time Delay Cable VoP: **66%**      Array elements N-S baseline spacing (feet): **32**  
 Array elements E-W baseline spacing (feet): **32**

| N-S Offset<br>(degrees) | E-W Offset<br>(degrees) | Delay Cable Lengths (feet & inches) |               |           |               |           | AZ<br>(degrees) | EL<br>(degrees) |
|-------------------------|-------------------------|-------------------------------------|---------------|-----------|---------------|-----------|-----------------|-----------------|
|                         |                         | A (S) / B (N)                       | C (S) / D (N) | E         | F (W) / G (E) | H         |                 |                 |
| 25 S                    | 60 E                    | 8' 11"                              | 17' 10-1/4"   | 4' 5-1/2" | 18' 3-1/2"    | 9' 1-3/4" | 105             | 29              |
| 25 S                    | 45 E                    | 8' 11"                              | 17' 10-1/4"   | 4' 5-1/2" | 14' 11-1/4"   | 7' 5-1/2" | 115             | 42              |
| 25 S                    | 30 E                    | 8' 11"                              | 17' 10-1/4"   | 4' 5-1/2" | 10' 6-3/4"    | 5' 3-1/4" | 129             | 53              |
| 25 S                    | 15 E                    | 8' 11"                              | 17' 10-1/4"   | 4' 5-1/2" | 5' 5-1/2"     | 2' 8-3/4" | 150             | 62              |
| 25 S                    | 0                       | 8' 11"                              | 17' 10-1/4"   | 4' 5-1/2" | 0"            | 0"        | 180             | 65              |
| 25 S                    | 15 W                    | 8' 11"                              | 17' 10-1/4"   | 4' 5-1/2" | 5' 5-1/2"     | 2' 8-3/4" | 210             | 62              |
| 25 S                    | 30 W                    | 8' 11"                              | 17' 10-1/4"   | 4' 5-1/2" | 10' 6-3/4"    | 5' 3-1/4" | 231             | 53              |
| 25 S                    | 45 W                    | 8' 11"                              | 17' 10-1/4"   | 4' 5-1/2" | 14' 11-1/4"   | 7' 5-1/2" | 245             | 42              |
| 25 S                    | 60 W                    | 8' 11"                              | 17' 10-1/4"   | 4' 5-1/2" | 18' 3-1/2"    | 9' 1-3/4" | 255             | 29              |
| <hr/>                   |                         |                                     |               |           |               |           |                 |                 |
| 30 S                    | 60 E                    | 10' 6-3/4"                          | 21' 1-1/2"    | 5' 3-1/4" | 18' 3-1/2"    | 9' 1-3/4" | 108             | 29              |
| 30 S                    | 45 E                    | 10' 6-3/4"                          | 21' 1-1/2"    | 5' 3-1/4" | 14' 11-1/4"   | 7' 5-1/2" | 120             | 41              |
| 30 S                    | 30 E                    | 10' 6-3/4"                          | 21' 1-1/2"    | 5' 3-1/4" | 10' 6-3/4"    | 5' 3-1/4" | 135             | 51              |
| 30 S                    | 15 E                    | 10' 6-3/4"                          | 21' 1-1/2"    | 5' 3-1/4" | 5' 5-1/2"     | 2' 8-3/4" | 155             | 58              |
| 30 S                    | 0                       | 10' 6-3/4"                          | 21' 1-1/2"    | 5' 3-1/4" | 0"            | 0"        | 180             | 60              |
| 30 S                    | 15 W                    | 10' 6-3/4"                          | 21' 1-1/2"    | 5' 3-1/4" | 5' 5-1/2"     | 2' 8-3/4" | 205             | 58              |
| 30 S                    | 30 W                    | 10' 6-3/4"                          | 21' 1-1/2"    | 5' 3-1/4" | 10' 6-3/4"    | 5' 3-1/4" | 225             | 51              |
| 30 S                    | 45 W                    | 10' 6-3/4"                          | 21' 1-1/2"    | 5' 3-1/4" | 14' 11-1/4"   | 7' 5-1/2" | 240             | 41              |
| 30 S                    | 60 W                    | 10' 6-3/4"                          | 21' 1-1/2"    | 5' 3-1/4" | 18' 3-1/2"    | 9' 1-3/4" | 252             | 29              |
| <hr/>                   |                         |                                     |               |           |               |           |                 |                 |
| 35 S                    | 60 E                    | 12' 1-1/4"                          | 24' 2-3/4"    | 6' 0-3/4" | 18' 3-1/2"    | 9' 1-3/4" | 112             | 28              |
| 35 S                    | 45 E                    | 12' 1-1/4"                          | 24' 2-3/4"    | 6' 0-3/4" | 14' 11-1/4"   | 7' 5-1/2" | 125             | 39              |
| 35 S                    | 30 E                    | 12' 1-1/4"                          | 24' 2-3/4"    | 6' 0-3/4" | 10' 6-3/4"    | 5' 3-1/4" | 140             | 48              |
| 35 S                    | 15 E                    | 12' 1-1/4"                          | 24' 2-3/4"    | 6' 0-3/4" | 5' 5-1/2"     | 2' 8-3/4" | 159             | 53              |
| 35 S                    | 0                       | 12' 1-1/4"                          | 24' 2-3/4"    | 6' 0-3/4" | 0"            | 0"        | 180             | 55              |
| 35 S                    | 15 W                    | 12' 1-1/4"                          | 24' 2-3/4"    | 6' 0-3/4" | 5' 5-1/2"     | 2' 8-3/4" | 201             | 53              |
| 35 S                    | 30 W                    | 12' 1-1/4"                          | 24' 2-3/4"    | 6' 0-3/4" | 10' 6-3/4"    | 5' 3-1/4" | 220             | 48              |
| 35 S                    | 45 W                    | 12' 1-1/4"                          | 24' 2-3/4"    | 6' 0-3/4" | 14' 11-1/4"   | 7' 5-1/2" | 235             | 39              |
| 35 S                    | 60 W                    | 12' 1-1/4"                          | 24' 2-3/4"    | 6' 0-3/4" | 18' 3-1/2"    | 9' 1-3/4" | 248             | 28              |

**AJ4CO**  
OBSERVATORY


### AJ4CO Observatory Diagram

|               |                           |                           |     |
|---------------|---------------------------|---------------------------|-----|
| SIZE<br>A     | DATE<br>01 OCT 2014       | PART NUMBER<br><b>N/A</b> | REV |
| SCALE<br>NONE | DRAWN BY<br>DAVE TYPINSKI | SHEET<br>2D OF 5          |     |

### TFD Array Beam Steering

**Time Delay Cable VoP: 66%**      **Array elements N-S baseline spacing (feet): 32**  
**Array elements E-W baseline spacing (feet): 32**

| N-S Offset<br>(degrees) | E-W Offset<br>(degrees) | Delay Cable Lengths (feet & inches) |               |           |               |           | AZ<br>(degrees) | EL<br>(degrees) |
|-------------------------|-------------------------|-------------------------------------|---------------|-----------|---------------|-----------|-----------------|-----------------|
|                         |                         | A (S) / B (N)                       | C (S) / D (N) | E         | F (W) / G (E) | H         |                 |                 |
| 40 S                    | 60 E                    | 13' 7"                              | 27' 1-3/4"    | 6' 9-1/2" | 18' 3-1/2"    | 9' 1-3/4" | 116             | 27              |
| 40 S                    | 45 E                    | 13' 7"                              | 27' 1-3/4"    | 6' 9-1/2" | 14' 11-1/4"   | 7' 5-1/2" | 130             | 37              |
| 40 S                    | 30 E                    | 13' 7"                              | 27' 1-3/4"    | 6' 9-1/2" | 10' 6-3/4"    | 5' 3-1/4" | 145             | 44              |
| 40 S                    | 15 E                    | 13' 7"                              | 27' 1-3/4"    | 6' 9-1/2" | 5' 5-1/2"     | 2' 8-3/4" | 162             | 49              |
| 40 S                    | 0                       | 13' 7"                              | 27' 1-3/4"    | 6' 9-1/2" | 0"            | 0"        | 180             | 50              |
| 40 S                    | 15 W                    | 13' 7"                              | 27' 1-3/4"    | 6' 9-1/2" | 5' 5-1/2"     | 2' 8-3/4" | 198             | 49              |
| 40 S                    | 30 W                    | 13' 7"                              | 27' 1-3/4"    | 6' 9-1/2" | 10' 6-3/4"    | 5' 3-1/4" | 215             | 44              |
| 40 S                    | 45 W                    | 13' 7"                              | 27' 1-3/4"    | 6' 9-1/2" | 14' 11-1/4"   | 7' 5-1/2" | 230             | 37              |
| 40 S                    | 60 W                    | 13' 7"                              | 27' 1-3/4"    | 6' 9-1/2" | 18' 3-1/2"    | 9' 1-3/4" | 244             | 27              |
| 45 S                    | 60 E                    | 14' 11-1/4"                         | 29' 10-1/2"   | 7' 5-1/2" | 18' 3-1/2"    | 9' 1-3/4" | 120             | 27              |
| 45 S                    | 45 E                    | 14' 11-1/4"                         | 29' 10-1/2"   | 7' 5-1/2" | 14' 11-1/4"   | 7' 5-1/2" | 135             | 35              |
| 45 S                    | 30 E                    | 14' 11-1/4"                         | 29' 10-1/2"   | 7' 5-1/2" | 10' 6-3/4"    | 5' 3-1/4" | 150             | 41              |
| 45 S                    | 15 E                    | 14' 11-1/4"                         | 29' 10-1/2"   | 7' 5-1/2" | 5' 5-1/2"     | 2' 8-3/4" | 165             | 44              |
| 45 S                    | 0                       | 14' 11-1/4"                         | 29' 10-1/2"   | 7' 5-1/2" | 0"            | 0"        | 180             | 45              |
| 45 S                    | 15 W                    | 14' 11-1/4"                         | 29' 10-1/2"   | 7' 5-1/2" | 5' 5-1/2"     | 2' 8-3/4" | 195             | 44              |
| 45 S                    | 30 W                    | 14' 11-1/4"                         | 29' 10-1/2"   | 7' 5-1/2" | 10' 6-3/4"    | 5' 3-1/4" | 210             | 41              |
| 45 S                    | 45 W                    | 14' 11-1/4"                         | 29' 10-1/2"   | 7' 5-1/2" | 14' 11-1/4"   | 7' 5-1/2" | 225             | 35              |
| 45 S                    | 60 W                    | 14' 11-1/4"                         | 29' 10-1/2"   | 7' 5-1/2" | 18' 3-1/2"    | 9' 1-3/4" | 240             | 27              |
| 50 S                    | 60 E                    | 16' 2-1/4"                          | 32' 4-1/4"    | 8' 1"     | 18' 3-1/2"    | 9' 1-3/4" | 125             | 25              |
| 50 S                    | 45 E                    | 16' 2-1/4"                          | 32' 4-1/4"    | 8' 1"     | 14' 11-1/4"   | 7' 5-1/2" | 140             | 33              |
| 50 S                    | 30 E                    | 16' 2-1/4"                          | 32' 4-1/4"    | 8' 1"     | 10' 6-3/4"    | 5' 3-1/4" | 154             | 37              |
| 50 S                    | 15 E                    | 16' 2-1/4"                          | 32' 4-1/4"    | 8' 1"     | 5' 5-1/2"     | 2' 8-3/4" | 167             | 39              |
| 50 S                    | 0                       | 16' 2-1/4"                          | 32' 4-1/4"    | 8' 1"     | 0"            | 0"        | 180             | 40              |
| 50 S                    | 15 W                    | 16' 2-1/4"                          | 32' 4-1/4"    | 8' 1"     | 5' 5-1/2"     | 2' 8-3/4" | 193             | 39              |
| 50 S                    | 30 W                    | 16' 2-1/4"                          | 32' 4-1/4"    | 8' 1"     | 10' 6-3/4"    | 5' 3-1/4" | 206             | 37              |
| 50 S                    | 45 W                    | 16' 2-1/4"                          | 32' 4-1/4"    | 8' 1"     | 14' 11-1/4"   | 7' 5-1/2" | 220             | 33              |
| 50 S                    | 60 W                    | 16' 2-1/4"                          | 32' 4-1/4"    | 8' 1"     | 18' 3-1/2"    | 9' 1-3/4" | 235             | 25              |



## AJ4CO Observatory Diagram

|       |             |               |         |
|-------|-------------|---------------|---------|
| SIZE  | DATE        | PART NUMBER   | REV     |
| A     | 01 OCT 2014 | N/A           |         |
| SCALE | NONE        | DRAWN BY      | SHEET   |
|       |             | DAVE TYPINSKI | 2E OF 5 |

## TFD Array Beam Steering

Time Delay Cable VoP: **66%**      Array elements N-S baseline spacing (feet): **32**  
 Array elements E-W baseline spacing (feet): **32**

| N-S Offset<br>(degrees) | E-W Offset<br>(degrees) | Delay Cable Lengths (feet & inches) |               |           |               |           | AZ<br>(degrees) | EL<br>(degrees) |
|-------------------------|-------------------------|-------------------------------------|---------------|-----------|---------------|-----------|-----------------|-----------------|
|                         |                         | A (S) / B (N)                       | C (S) / D (N) | E         | F (W) / G (E) | H         |                 |                 |
| 55 S                    | 60 E                    | 17' 3-1/2"                          | 34' 7-1/4"    | 8' 7-3/4" | 18' 3-1/2"    | 9' 1-3/4" | 130             | 24              |
| 55 S                    | 45 E                    | 17' 3-1/2"                          | 34' 7-1/4"    | 8' 7-3/4" | 14' 11-1/4"   | 7' 5-1/2" | 145             | 30              |
| 55 S                    | 30 E                    | 17' 3-1/2"                          | 34' 7-1/4"    | 8' 7-3/4" | 10' 6-3/4"    | 5' 3-1/4" | 158             | 33              |
| 55 S                    | 15 E                    | 17' 3-1/2"                          | 34' 7-1/4"    | 8' 7-3/4" | 5' 5-1/2"     | 2' 8-3/4" | 169             | 35              |
| 55 S                    | 0                       | 17' 3-1/2"                          | 34' 7-1/4"    | 8' 7-3/4" | 0"            | 0"        | 180             | 35              |
| 55 S                    | 15 W                    | 17' 3-1/2"                          | 34' 7-1/4"    | 8' 7-3/4" | 5' 5-1/2"     | 2' 8-3/4" | 191             | 35              |
| 55 S                    | 30 W                    | 17' 3-1/2"                          | 34' 7-1/4"    | 8' 7-3/4" | 10' 6-3/4"    | 5' 3-1/4" | 202             | 33              |
| 55 S                    | 45 W                    | 17' 3-1/2"                          | 34' 7-1/4"    | 8' 7-3/4" | 14' 11-1/4"   | 7' 5-1/2" | 215             | 30              |
| 55 S                    | 60 W                    | 17' 3-1/2"                          | 34' 7-1/4"    | 8' 7-3/4" | 18' 3-1/2"    | 9' 1-3/4" | 230             | 24              |
| <hr/>                   |                         |                                     |               |           |               |           |                 |                 |
| 60 S                    | 60 E                    | 18' 3-1/2"                          | 36' 7"        | 9' 1-3/4" | 18' 3-1/2"    | 9' 1-3/4" | 135             | 22              |
| 60 S                    | 45 E                    | 18' 3-1/2"                          | 36' 7"        | 9' 1-3/4" | 14' 11-1/4"   | 7' 5-1/2" | 150             | 27              |
| 60 S                    | 30 E                    | 18' 3-1/2"                          | 36' 7"        | 9' 1-3/4" | 10' 6-3/4"    | 5' 3-1/4" | 162             | 29              |
| 60 S                    | 15 E                    | 18' 3-1/2"                          | 36' 7"        | 9' 1-3/4" | 5' 5-1/2"     | 2' 8-3/4" | 171             | 30              |
| 60 S                    | 0                       | 18' 3-1/2"                          | 36' 7"        | 9' 1-3/4" | 0"            | 0"        | 180             | 30              |
| 60 S                    | 15 W                    | 18' 3-1/2"                          | 36' 7"        | 9' 1-3/4" | 5' 5-1/2"     | 2' 8-3/4" | 189             | 30              |
| 60 S                    | 30 W                    | 18' 3-1/2"                          | 36' 7"        | 9' 1-3/4" | 10' 6-3/4"    | 5' 3-1/4" | 198             | 29              |
| 60 S                    | 45 W                    | 18' 3-1/2"                          | 36' 7"        | 9' 1-3/4" | 14' 11-1/4"   | 7' 5-1/2" | 210             | 27              |
| 60 S                    | 60 W                    | 18' 3-1/2"                          | 36' 7"        | 9' 1-3/4" | 18' 3-1/2"    | 9' 1-3/4" | 225             | 22              |

**AJ4CO**  
OBSERVATORY

### AJ4CO Observatory Diagram

|               |                           |                           |     |
|---------------|---------------------------|---------------------------|-----|
| SIZE<br>A     | DATE<br>01 OCT 2014       | PART NUMBER<br><b>N/A</b> | REV |
| SCALE<br>NONE | DRAWN BY<br>DAVE TYPINSKI | SHEET<br>2F OF 5          |     |