CLAIMS:

1. An antenna system comprising:
    a. a substantially planar phased array of radio-frequency lens modules; and
    b. a mechanical actuator, said lens modules mounted to said mechanical actuator;
    wherein each of said lens modules is configured to electronically scan in a first azimuth;
    the planar array has the same scan profile for every azimuth angle; and
    said mechanical actuator is configured to mechanically rotate said lens modules to scan in a second azimuth.
2. The antenna system of Claim 1 where the second azimuth overlaps with or is different than the first azimuth to scan over a combined 360 degrees.
3. The antenna system of Claim 1 or 2 where each lens module is individually tilted in elevation with respect to the actuator towards the first azimuth.
4. The antenna system of any of Claims 1-3 further comprising a rotation platform connected to said actuator where said array is mounted to said rotation platform and said rotation platform is tilted with respect to the actuator toward the first azimuth.
5. The antenna system of Claim 4 where each lens module is individually tilted in elevation with respect to the rotation platform towards the first azimuth.
6. The antenna system of any of Claims 1-5 wherein the lens modules are configured to electronically scan in an elevation plane.
7. An antenna system comprising:
    a. a primary phased array of radio-frequency lens modules, each of said lens modules being configured to electronically scan in a first azimuth, and
    b. a secondary phased array of radio-frequency lens modules where each lens module is tilted in elevation at a fixed angle with respect to the primary phased array toward the first azimuth.

8. The antenna system of Claim 7, additionally comprising a mechanical actuator, said lens modules in said primary and secondary arrays mounted to said mechanical actuator, said mechanical actuator being configured to mechanically rotate said lens modules from pointing at the first azimuth to instead scan at a second azimuth.
9. The antenna system of any of Claims 7-8, where the elements in the secondary array are mounted on the perimeter of the primary array.
10. The antenna system of Claim 7 additionally comprising a mechanical actuator, said lens modules in only the secondary array mounted to said mechanical actuator, said mechanical actuator being configured to mechanically rotate said lens modules from pointing first azimuth to instead scan at a second azimuth.
11. The antenna system of Claim 8 where the second azimuth overlaps with the first azimuth to scan over a combined 360 deg.
12. The antenna system of Claim 8, 11 where each lens module is individually tilted in elevation with respect to the actuator towards the first azimuth.
13. The antenna system of any of Claims 8, 11-12 further comprising a rotation platform connected to said actuator where said array is mounted to said rotation platform and said rotation platform is tilted with respect to the actuator toward the first azimuth.
14. The antenna system of Claim 13, where each lens module is individually tilted in elevation with respect to the rotation platform towards the first azimuth.
15. The antenna system of any of Claims 7-14 where the lens modules are configured to electronically scan in an elevation plane.
16. An antenna assembly comprising:
    a. a platform having a primary portion and a secondary portion, said secondary portion angled to be offset with respect to said primary portion;

b. a primary phased lens array mounted to the primary portion of said platform, said primary lens array having a plurality of primary antenna lens assemblies; and

c. a secondary phased lens array mounted to the secondary portion of said platform, said secondary lens array having a plurality of secondary antenna lens assemblies, whereby said secondary lens array is angled to be offset with respect to said primary lens array.

17. The antenna system of Claim 16, further comprising an actuator coupled to said platform to rotate said platform to provide azimuthal steering of said primary and secondary lens arrays.

18. The assembly system of any of Claims 16 or 17, said primary portion having a primary plane and said secondary portion having a secondary plane, the secondary plane at an angle of 30-70 degrees to the primary plane, said secondary portion below and to a side of said primary portion.