```
 1  pro torus_distribution, geometry, spatialdist, options, seed, startloc=startloc
 2
 3  ;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
 4  ;;
 5  ;;   Distribute packets in a torus centered on the central planet that is longitudinally
 6  ;;   symmetric.
 7  ;;
 8  ;;   Torus equation:
 9  ;;     x = (r0 + r1*cos(theta))*cos(phi)
10  ;;     y = (r0 + r1*cos(theta))*sin(phi)
11  ;;     z = r2*sin(theta)
12  ;;
13  ;;   If r2 = 0, then packets are confined to the equatorial plane.
14  ;;
15  ;;   Version History
16  ;;     2.0: File created.
17  ;;
18  ;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
19
20  npack = options.packets
21  phi = random_nr(seed=seed, npack)*2*!pi
22  theta = random_nr(seed=seed, npack)*2*!pi
23  r0 = (SpatialDist.torus_radii)[0]
24  r1 = random_nr(seed=seed, npack)*(SpatialDist.torus_radii)[1]
25  r2 = random_nr(seed=seed, npack)*(SpatialDist.torus_radii)[2]
26
27  *startloc.x = (r0 + r1*cos(theta))*cos(phi)
28  *startloc.y = (r0 + r1*cos(theta))*sin(phi)
29  *startloc.z = r2*sin(theta)
30
31  *startloc.latitude = theta
32  *startloc.longitude = phi
33
34  end
```