```
Y
H
\delta
(X, Y, Z)
(X, Y, Z)
(X, Y, Z)
H
    (X, Y, Z)
    (u, v, w)
   (u, v, w)
(u, v, w)
S
H
\delta
S
H
(u, v)
   uvw = \sin H \cos H 0 - \sin \delta \cos H \sin \delta \sin H \cos \delta \cos \delta \cos H - \cos \delta \sin H \sin \delta XYZ
   (X, Y, Z)
    XYZ = D\cos d\cos h - \cos d\sin h\sin d
   \begin{array}{c} (H,\delta)\\ base-\\ line\\ D\\ (h,d)\\ base-\\ line\\ \ref{eq:constraints} \end{array}
   uvw = D\cos d\sin(H-h)\sin d\cos\delta - \cos d\sin\delta\cos(H-h)\sin d\sin\delta + \cos d\cos\delta\cos(H-h)
   \sin d = \sin L \sin e + \cos L \cos e \cos A
(4)
```

 $XYZ = D\cos L\sin E - \sin L\cos E\cos A\cos E\sin A\sin L\sin E + \cos L\cos E\cos A$