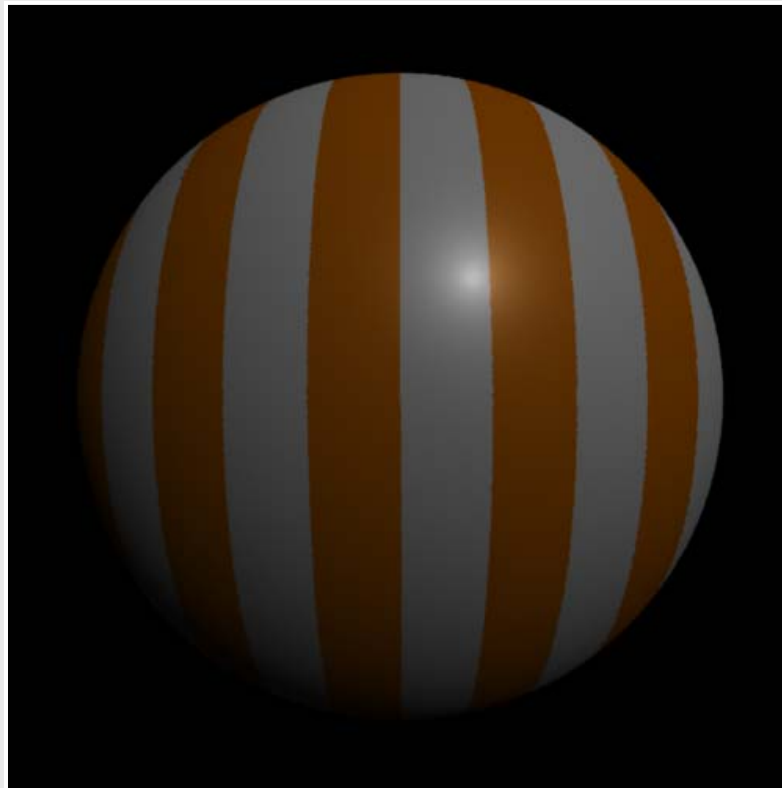
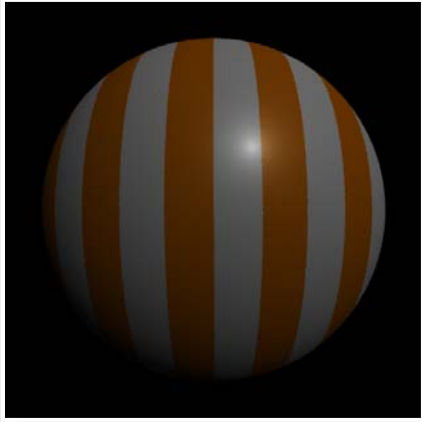


Group Challenge – April 14, 2006
Try different values for *NoiseAmp*
and explain why you get what you get
(note the change in the equation)

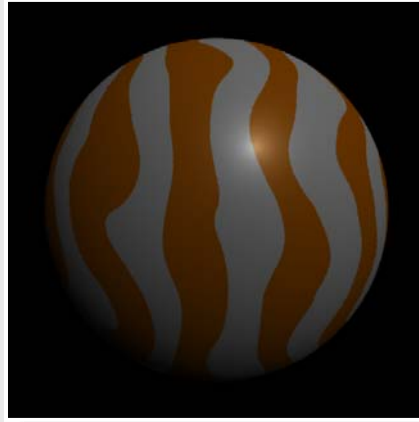
```
float x = xcomp(P) + noise(NoiseAmp*PP);  
float xfrac = mod( x, 1. );
```



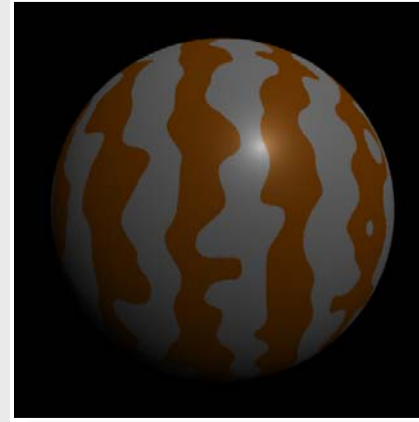
```
float x = xcomp(P) + noise(NoiseAmp*PP);  
float xfrac = mod( x, 1. );
```



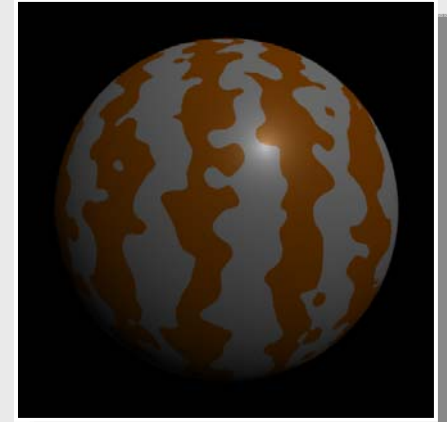
NoiseAmp = 0.



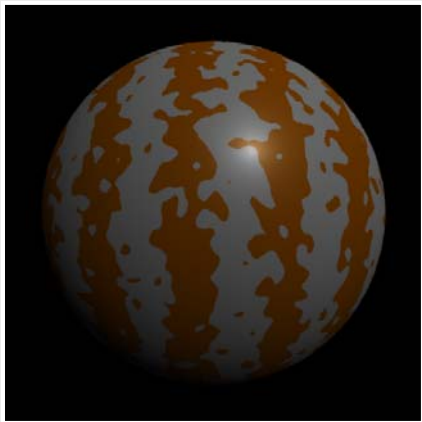
NoiseAmp = 1.



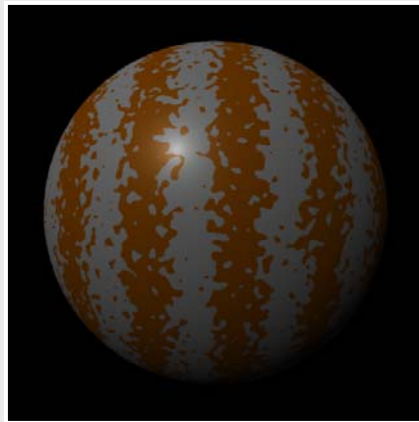
NoiseAmp = 2.



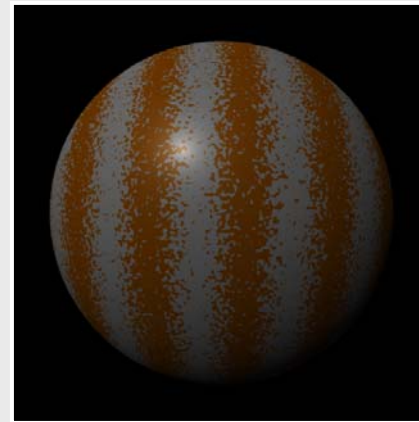
NoiseAmp = 3.



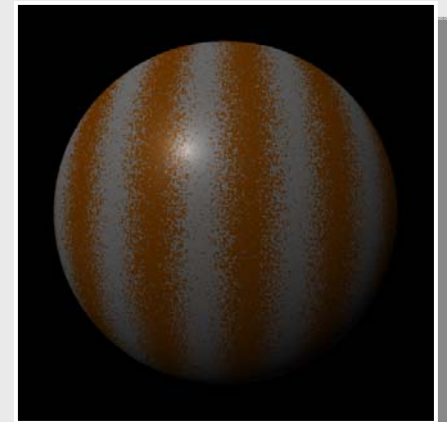
NoiseAmp = 5.



NoiseAmp = 10.



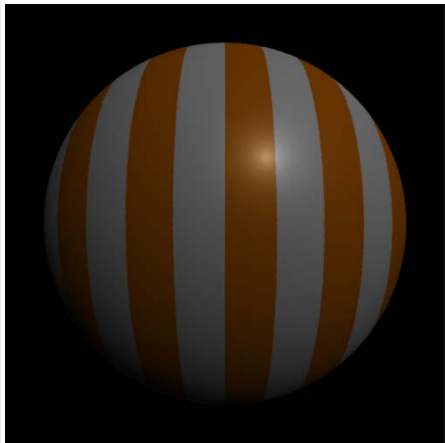
NoiseAmp = 25.



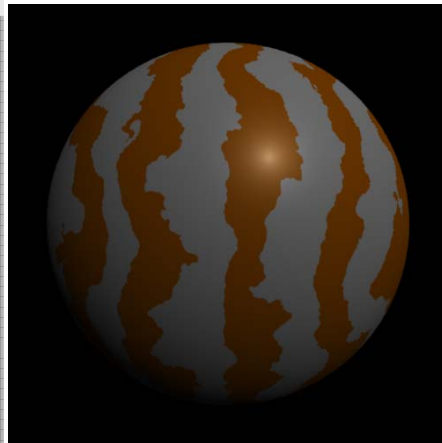
NoiseAmp = 50.

**Octaves,
also known as Fractional Brownian Motion (fBm),
also known as 1/f noise**

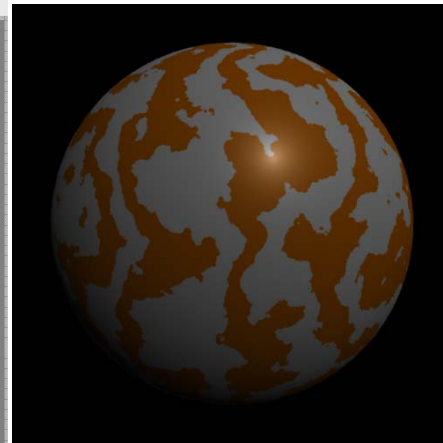
```
float i, size, magnitude;  
magnitude = 0.;  
size = 1.;  
for( i = 0.; i < 6.0; i += 1.0 )  
{  
    magnitude += ( .5 - noise( size * PP ) ) / size;  
    size *= 2.0;  
}  
float x = xcomp(P) + Km * magnitude;
```



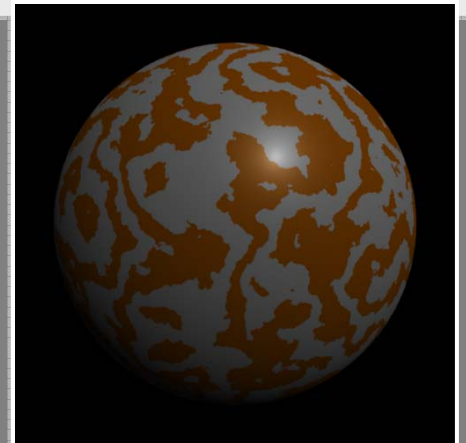
Km = 0.



Km = 1.



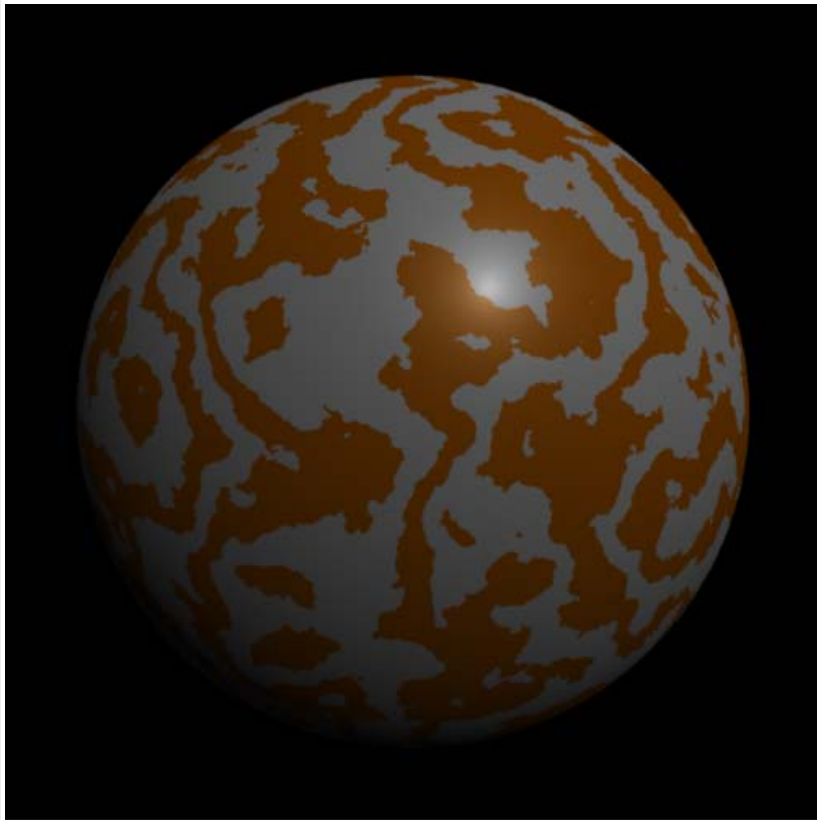
Km = 2.



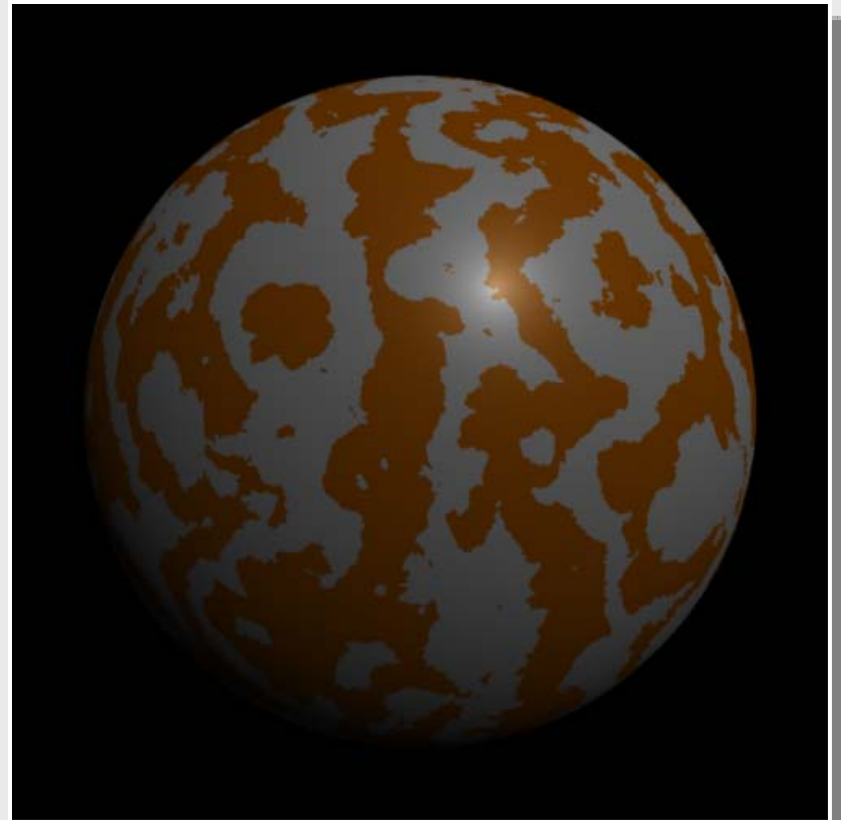
Km = 3.

“Turbulence”

```
magnitude += abs( .5 - noise( size * PP ) ) / size;
```



$(.5 - \text{noise}(\text{size} * \text{PP})) / \text{size};$



$\text{abs}(.5 - \text{noise}(\text{size} * \text{PP})) / \text{size};$