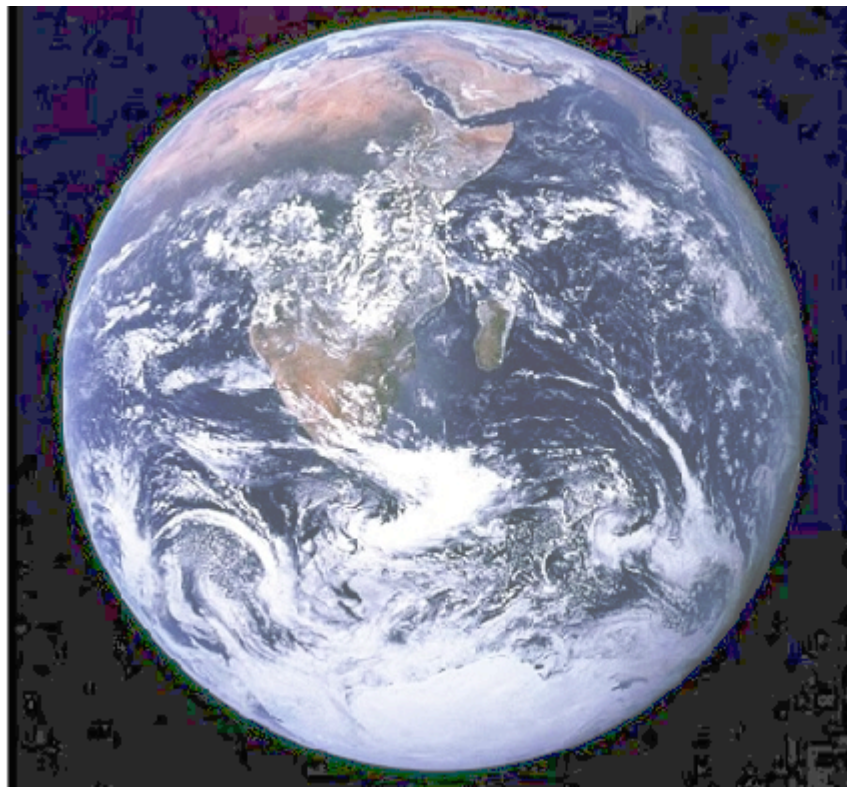
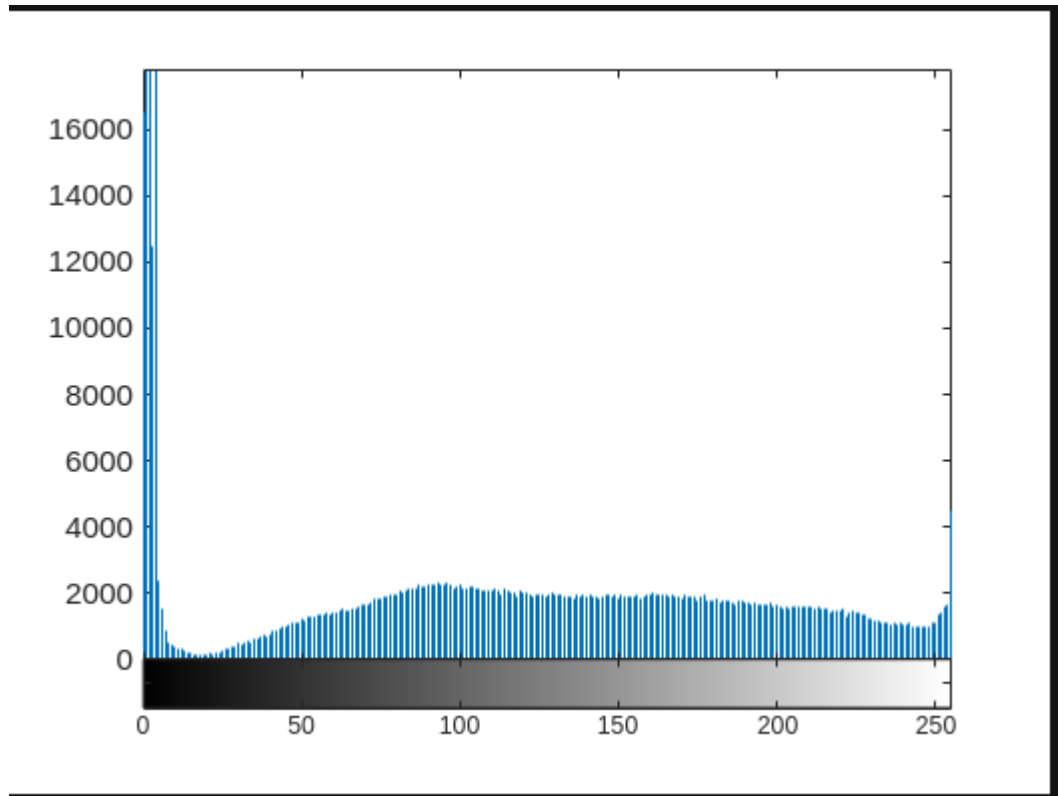
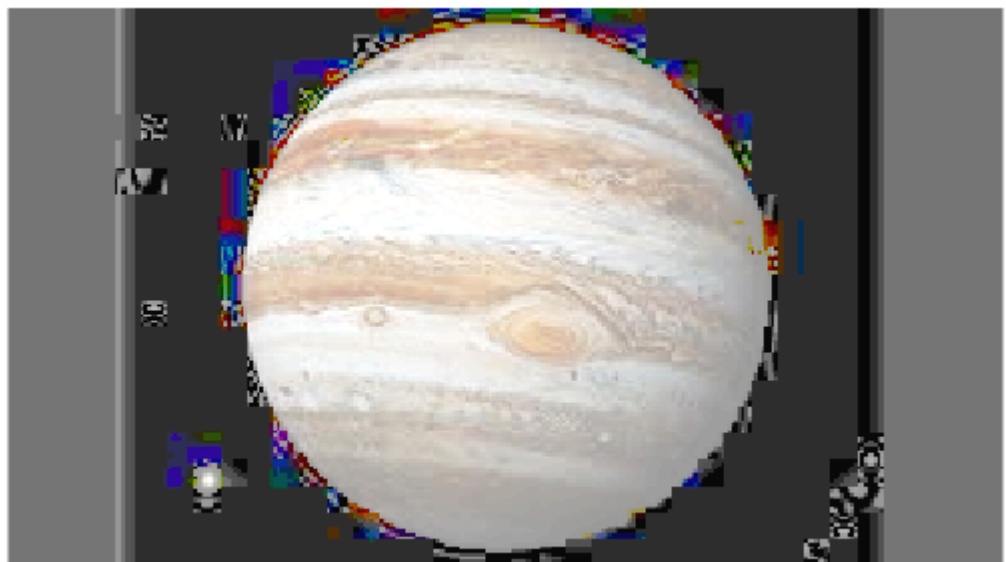
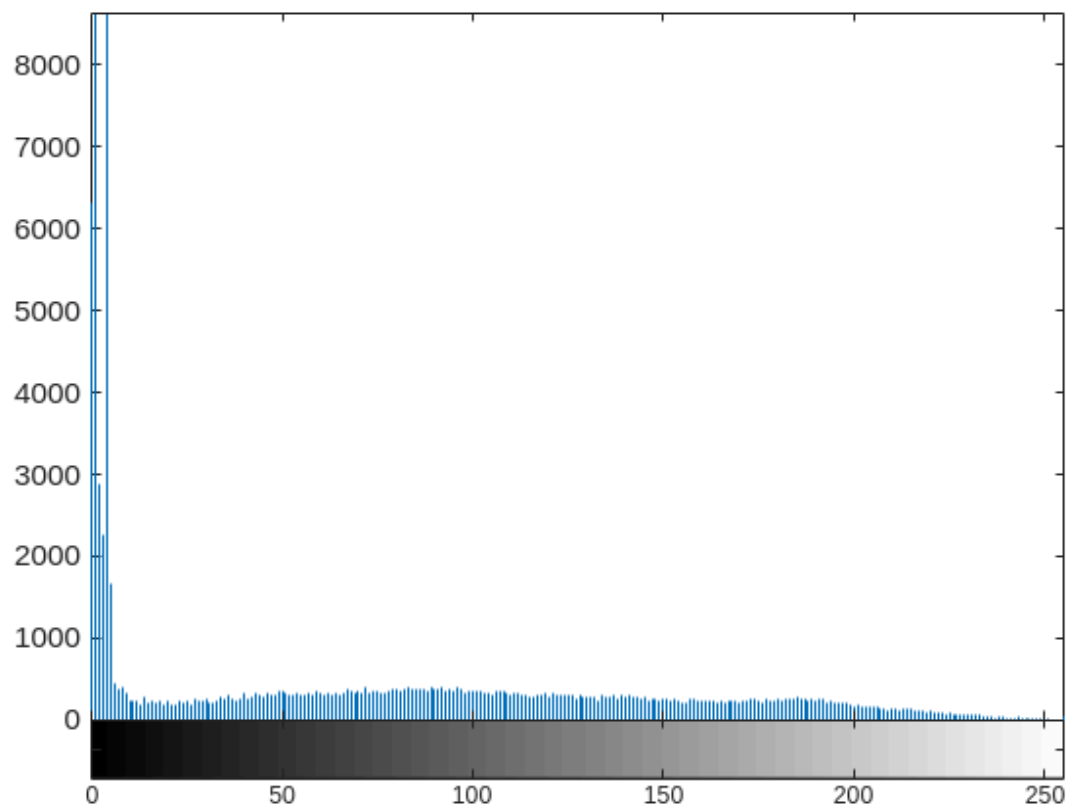


1. Obtenemos histograma y equalizamos

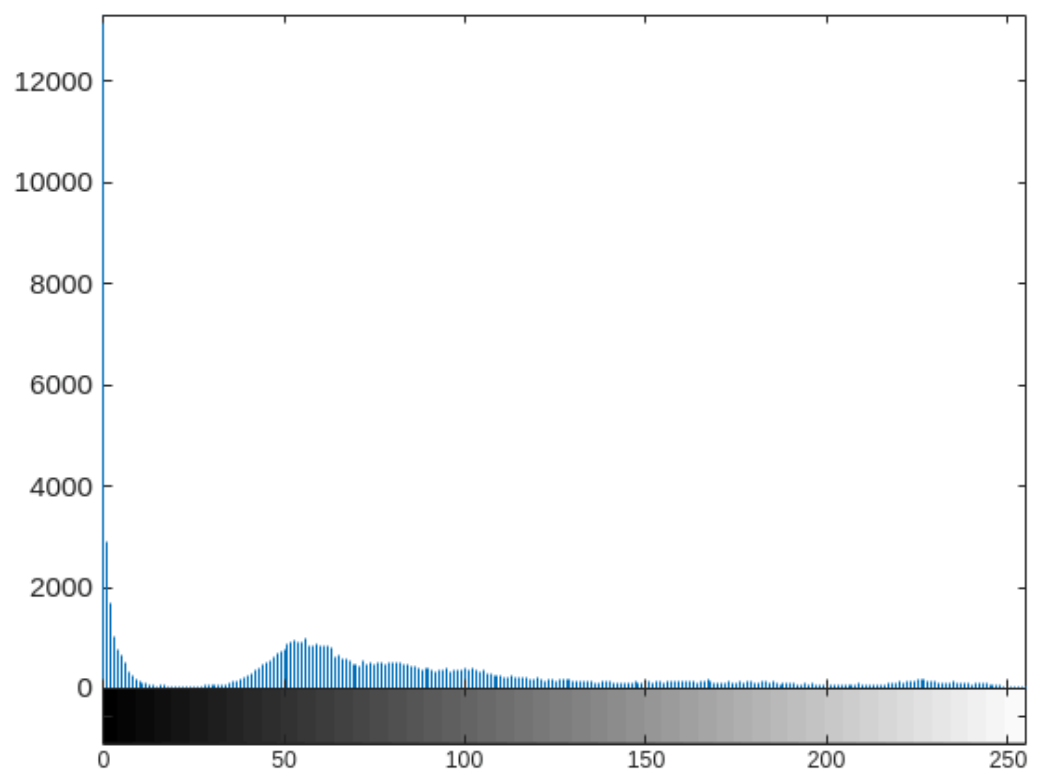
A. EARTH



B. JUPITER



C. MARS



```
E=imread("Earth.jpg")
imhist(E)
EAQ=histeq(E)
imshow(EAQ)

J=imread("Jupiter.jpeg")
imhist(J)
JEQ=histeq(J)
imshow(JEQ)

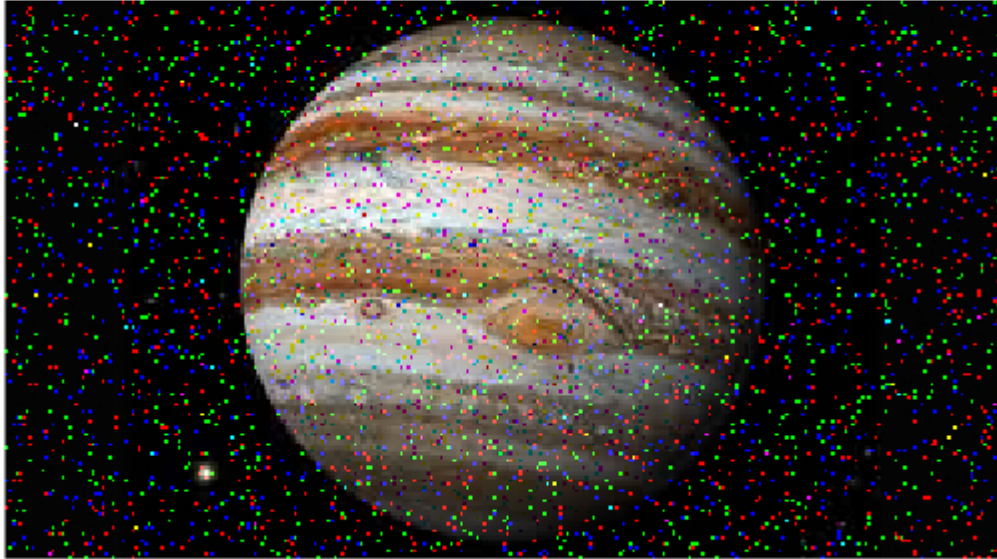
M=imread("Mars.jpeg")
imhist(M)
MEQ=histeq(M)
imshow(MEQ)
```

2. Aplicando filtros

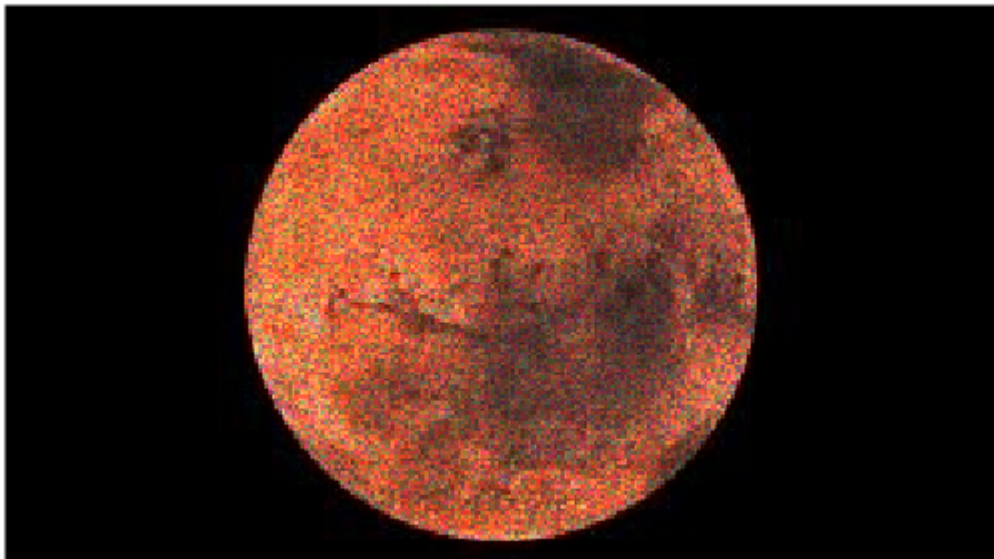
a. Gaussian a tierra



b. Sal y pimienta a jupiter



c. Moteado (speckle) a marte




```
imshow(HEQ)  
  
RGE=imnoise(E,"gaussian")  
imshow(RGE)  
  
SPJ=imnoise(J,"salt & pepper")  
imshow(SPJ)  
  
MM=imnoise(M,"speckle")  
imshow(MM)
```

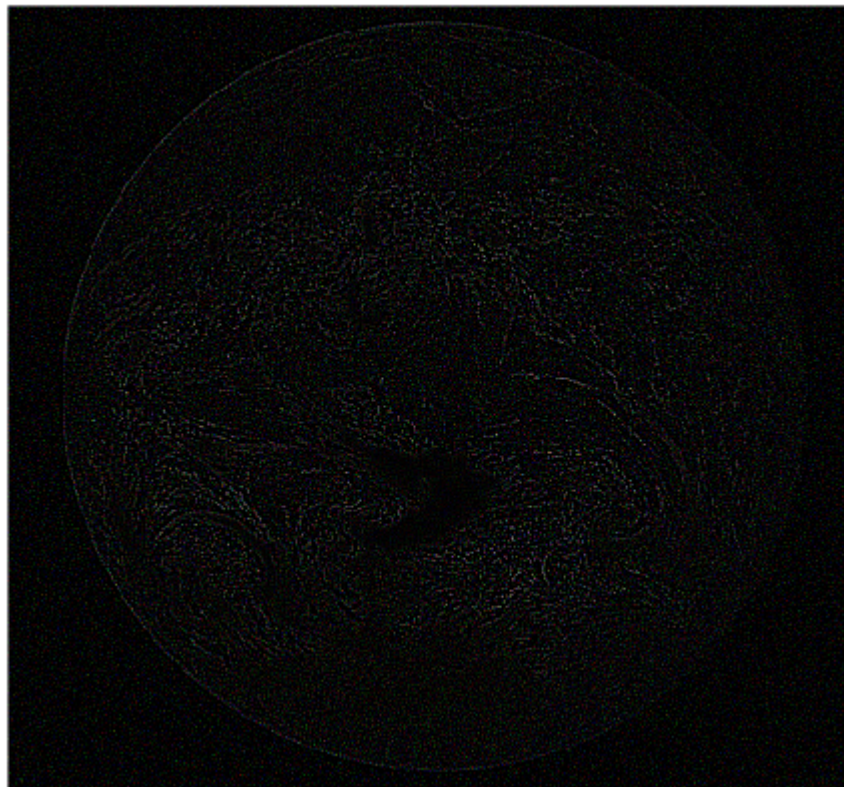
3. Aplicando filtros paso bajo, pasa banda, paso alto

a. Aplicando a earth

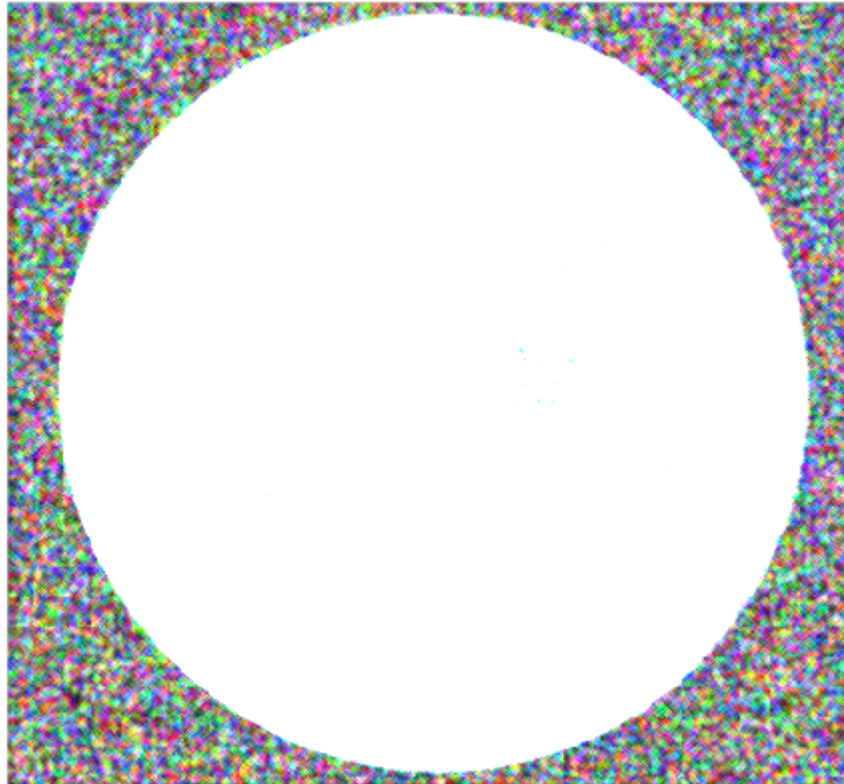
Earth - Filtro Paso Bajo



Earth - Filtro Paso Alto



Earth - Filtro Pasa Banda

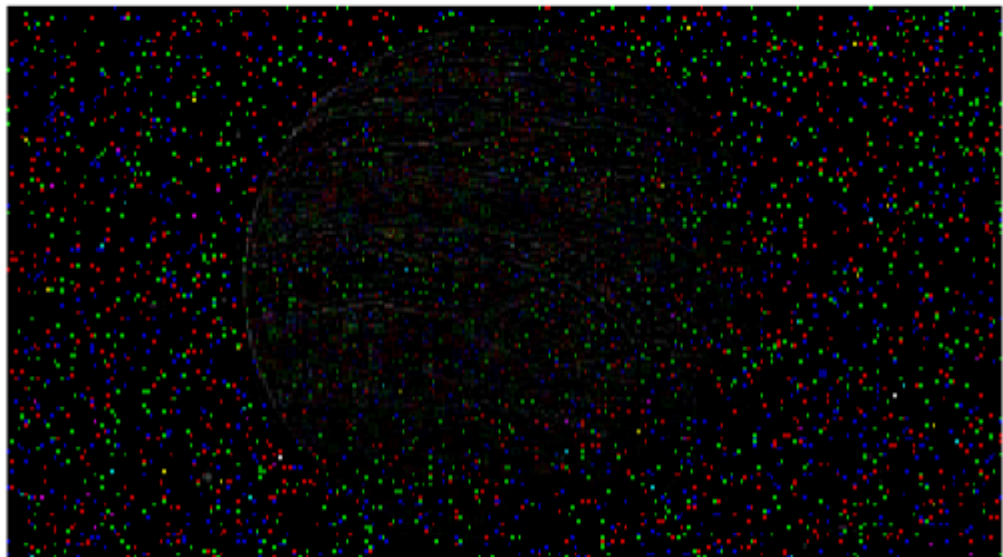


b. Jupiter

Jupiter - Filtro Paso Bajo

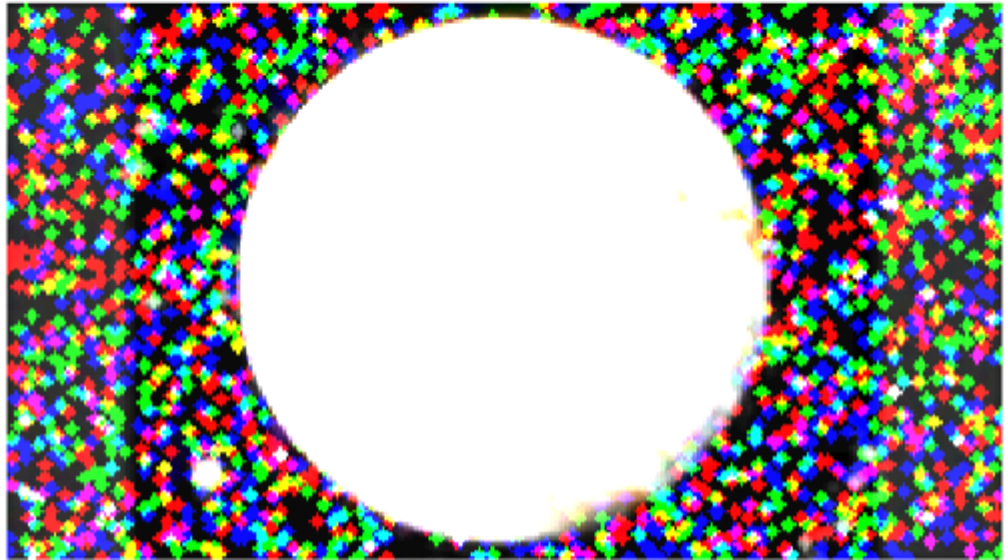


Jupiter - Filtro Paso Alto





Jupiter - Filtro Pasa Banda



c. Mars

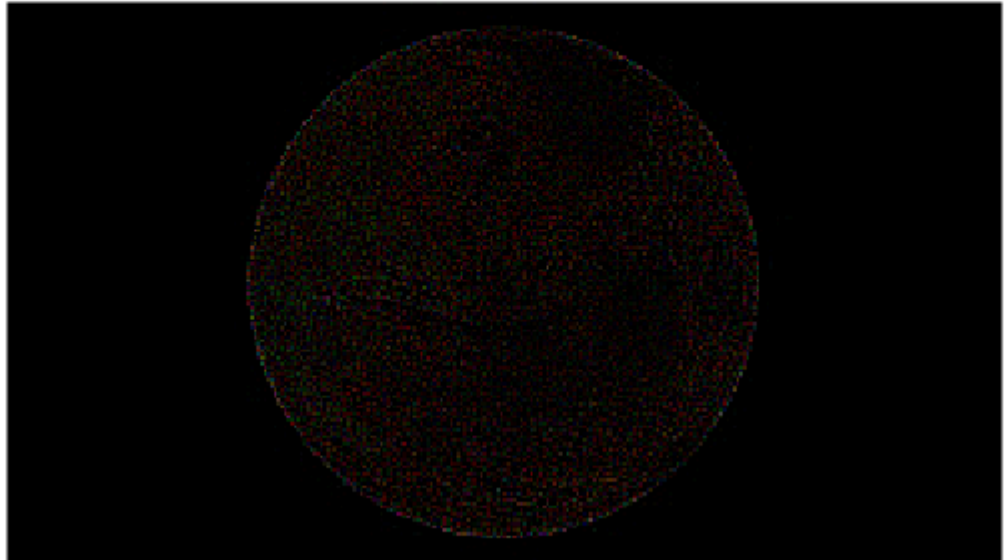


Mars - Filtro Paso Bajo





Mars - Filtro Paso Alto



Mars - Filtro Pasa Banda



En todos los casos el filtro pasa bajas fue el mejor.

```
h = [1/9,1/9,1/9;1/9,1/9,1/9;1/9,1/9,1/9]
i = [-1/9,-1/9,-1/9;-1/9,8/9,-1/9;-1/9,-1/9,-1/9]
j = [0 0 1 0 0;
     0 1 1 1 0;
     1 1 1 1 1;
     0 1 1 1 0;
     0 0 1 0 0];

% Aplicando primero a earth
EPB = imfilter(RGE, h); % Paso bajo
EPA = imfilter(RGE, i); % Paso alto
EPBB = imfilter(RGE, j); % Pasa banda

figure, imshow(EPB), title('Earth - Filtro Paso Bajo');
figure, imshow(EPA), title('Earth - Filtro Paso Alto');
figure, imshow(EPBB), title('Earth - Filtro Pasa Banda');

% Aplicando a jupiter
JPB = imfilter(SPJ, h); % Paso bajo
JPA = imfilter(SPJ, i); % Paso alto
JPBB = imfilter(SPJ, j); % Pasa banda

figure, imshow(JPB), title('Jupiter - Filtro Paso Bajo');
figure, imshow(JPA), title('Jupiter - Filtro Paso Alto');
figure, imshow(JPBB), title('Jupiter - Filtro Pasa Banda');

% Aplicando a mars
MPB = imfilter(MM, h); % Paso bajo
MPA = imfilter(MM, i); % Paso alto
MPBB = imfilter(MM, j); % Pasa banda

figure, imshow(MPB), title('Mars - Filtro Paso Bajo');
figure, imshow(MPA), title('Mars - Filtro Paso Alto');
figure, imshow(MPBB), title('Mars - Filtro Pasa Banda');
```

4. Aplicando ruido de poisson

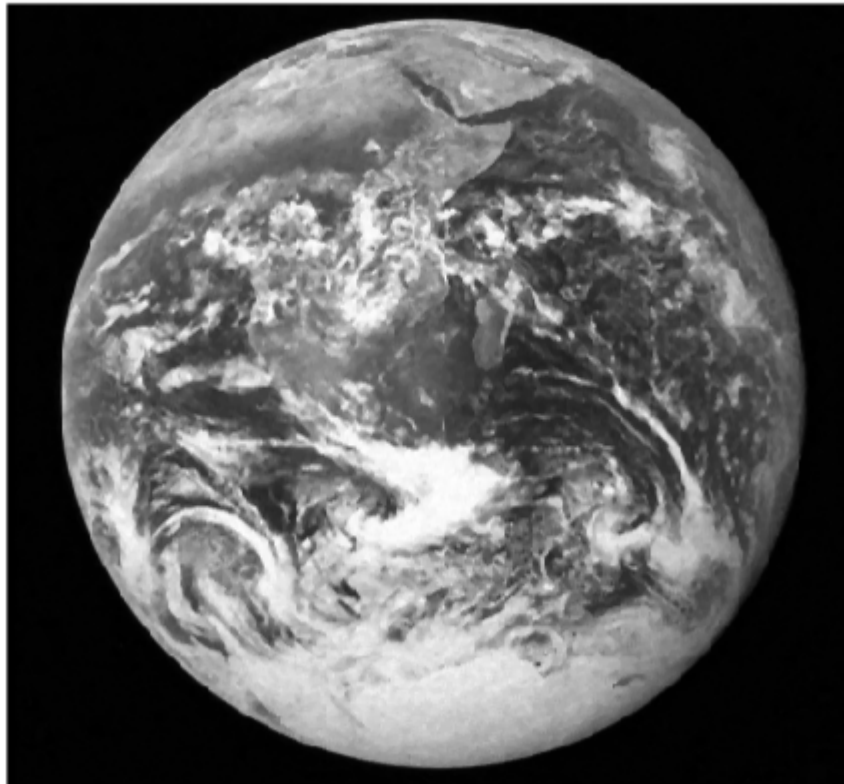
JOSE LUIS SANDOVAL PEREZ



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Mediana





```
PE=imnoise(E,"poisson")
PJ=imnoise(J,"poisson")
PM=imnoise(M,"poisson")
EBW=rgb2gray(PE)
JBW=rgb2gray(PJ)
MBW=rgb2gray(PM)

EM=medfilt2(EBW)
imshow(EM)
JM=medfilt2(JBW)
imshow(JM)
MM=medfilt2(MBW)
imshow(MM)
```