System Brief: Bessieres

PHYSICAL DATA

Bessieres was the name applied to the DM+36 2147 star system by the French captain of the ESA scout ship that first visited it. The star lies 8.257 light years from Sol, but due to the distance limitations of stutterwarp drive, travel is 11.650 light years and requires two jumps. There are three neighbors accessible by stutterwarp travel: Nyotekundu, Neubayern, and Ross 128.

The binary system contains two stars, Bessieres A, and an unseen companion, Bessieres B, orbiting at an average of 38 au. The primary is a M2V star, with a radius of 0.464 Sol and a mass of 0.420 Sol. Its average luminosity is 0.0268 Sol, with a Stellar Effective Temperature of 3220°K, and an absolute magnitude of 10.49. The companion is a M0V star with a radius of 0.540 Sol and a mass of 0.48 Sol. Average luminosity is 0.04 Sol, with a Stellar Effective Temperature of 3500°K, and an absolute magnitude of 13.

Only the primary has a planetary system; the companion has no planets, and no bodies orbit the combined system. The life zone of the primary ranges from 0.118 au to 0.237 au; all system bodies are in the outer zone the life zone of the companion ranges from 0.144 au to 0.290 au.

TRAVEL DATA

The planetary system of the primary, Bessieres A, consists of four planets, thirteen satellites, and an asteroid belt. The stellar 0.0001 g-gradient of the primary is located at 1.588 au, with a 0.1 g-gradient at 0.051 au. Planets I – III are within the stellar threshold; planet IV and the asteroid belt are outside. Stutterwarp discharge is possible at the following system bodies: I, II, II, IV, and IV d; in addition to the primary. Bessieres B has no planetary system. The stellar 0.0001 g-gradient of the primary is located at 1.697 au, with a 0.1 g-gradient at 0.054 au. Primary discharge is at IV d, where a French outpost is located, or at IV for ships not calling at the outpost.

Bessieres A I

Planet is a Failed Core body orbiting at 0.40 au with no satellites. Travel distance within threshold is 1.19 au. Stutterwarp discharge is possible from an altitude of 3,478 km.

Bessieres A II

Planet is Failed Core body orbiting at 0.60 au with no satellites. Travel distance within threshold is 0.99 au. Stutterwarp discharge is possible from an altitude of 12,504 km

Bessieres A III

Planet is Gas Giant body orbiting at 1.02 au with eight satellites. Travel distance within threshold is 0.57 au. Stutterwarp discharge is possible from an altitude of 25,157 km. Satellites consist of five rings, two ice balls, and one rock. Stutterwarp discharge is not possible at any satellites.

Bessieres A IV[1]

Planet is Gas Giant body orbiting at 2.14 au with five satellites. Planet is located beyond threshold. Stutterwarp discharge is possible from an altitude of 487,420 km. Satellites consist of two rings, a

chunk, a failed core, and an ice ball. Stutterwarp discharge is possible at IV d from an altitude of 4,201 km. A French outpost is located on IV d, and serves as a way station, providing fuel mined from the ice ball at IV e.

Bessieres A V

Orbit V is empty.

Bessieres A VI

Asteroid belt is present in orbit VI. Stutterwarp discharge is not possible.

Bessieres B I

Orbit I is empty.

SOURCES

1. The Director's Guide, © 1988 GDW / © 2005 FFE, provides canon information on the type, nationality, and gravity of the settlement.

System Name	**Travel Data for Bessieres**

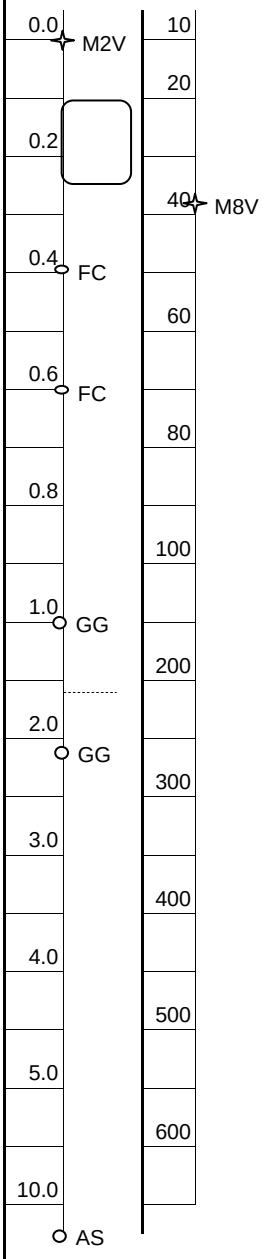
Navigational Data

Colonial Region	French	
Direct Distance From Sol	8.257	ly
Travel Distance from Sol	11.650	ly
Jumps from Sol	2	

Neighbour System	Distance	
Nyotekundu	7.649	ly
Neubayern	**7.113**	ly
Ross 128	6.444	ly
		ly
		ly
		ly
		ly
		ly
		ly

	Stellar Coordinates			
	Primary	Companion	Companion	Companion
X	-6.5			
Y	1.7			
Z	4.8			

System Schematic



AS Asteroid
CH Chunk
DS Desert
FC Failed Core
G Garden
GG Gas Giant
GL Glacier
HH Hot House
IC Ice Ball
PoG Post-Garden
PrG Pre-Garden
RK Rock
0.0001 G Grad
Life Zone

System Bodies with Stutterwarp Discharge (0.1G Gradient) Information

	Primary	Companion	Companion	Companion	Companion	
Stellar 0.1G Grad	0.051	0.054				au
Stellar 0.0001G Grad	1.588	1.697				au

Orbit	Orbit	Body Type	Position	T-Travel	Diameter, km	0.1G, km	0.1G Altitude
I	0.40 au	Failed Core	inside	1.19 au	14,000	10,478	3,478 km
II	0.60 au	Failed Core	inside	0.99 au	25,000	25,004	12,504 km
III	1.02 au	Gas Giant	inside	0.57 au	18,000	34,157	25,157 km
a	0.018 10^6 km	Ring		au	-	-	none km
b	0.036 10^6 km	Ring		au	-	-	none km
c	0.054 10^6 km	Ring		au	-	-	none km
d	0.090 10^6 km	Ring		au	-	-	none km
e	0.126 10^6 km	Ring		au	-	-	none km
f	0.162 10^6 km	Ring		au	-	-	none km
g	0.540 10^6 km	Ice Ball		au	4,000	1,132	none km
h	0.990 10^6 km	Rock		au	2,000	895	none km
IV	2.14 au	Gas Giant	outside	0.00 au	114,000	544,420	487,420 km
a	0.342 10^6 km	Ring		au	-	-	none km
b	0.570 10^6 km	Ring		au	-	-	none km
c	3.420 10^6 km	Chunk		au	300	40	none km
d	3.990 10^6 km	Failed Core		au	6,000	7,201	4,201 km
e	10.260 10^6 km	Ice Ball		au	3,000	1,273	none km
V	4.71 au	<empty>	outside	0.00 au	-	-	none km
VI	10.37 au	Asteroids	outside	0.00 au	-	-	none km
							none km
M0 V							none km
I	0.70 au	<empty>	inside	1.00 au	-	-	none km
							none km

Position: Inside indicates body orbits within the stellar 0.0001G gradient.
T-Travel: The distance that must be traveled within the stellar 0.0001G gradient to reach the body.
01.G: The distance of the 0.1G gradient from the core of the body.
0.1G Altitude: The distance of the 0.1G gradient above the surface of the body. A result of "none" indicates that a usable 0.1G gradient is not available and discharge cannot occur at the body.

Notes

France maintains an outpost since 2145 on Bessieres IV d.

Values for all planets and satellites are unofficial, except that gravity of outpost is 0.58G (2300AD Director's Guide / Colonies of Earth table).

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Navigational Data

Colonial Region	French
Direct Distance From Sol	8.257 ly
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Jumps from Sol	2

Neighbour System	Distance
Nyotekundu	7.649 ly
Neubayern	**7.113** ly
Ross 128	6.444 ly
	ly
	ly
	ly
	ly
	ly
	ly

	Stellar Coordinates			
	Primary	Companion	Companion	Companion
X	-6.5			
Y	1.7			
Z	4.8			

Stellar Data

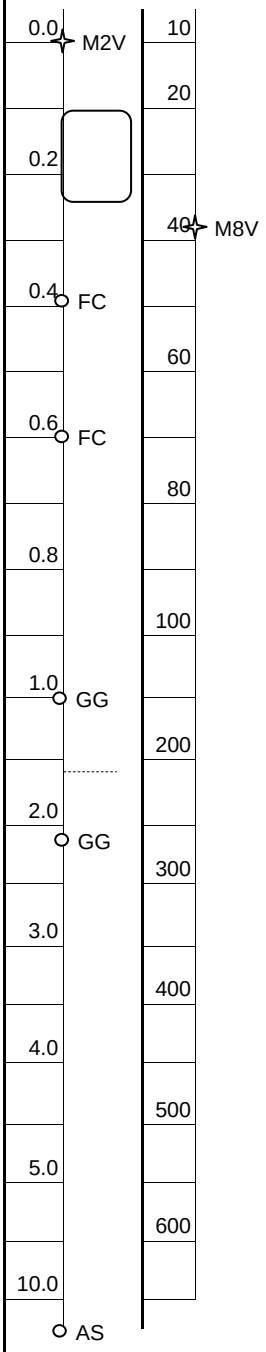
	Primary	Companion	Companion	Companion	Companion
Name					
Spectral Class	M 2	M 0			
Size	V	V			
Magnitude	10.49	13			
Identification No.	4110.0	4110.1			
Type	Red Main	Red Main			
Radius	0.464	0.54			
Mass	0.420	0.48			
Luminosity	0.0268	0.04			
Effective Temp	3220 °K	3500 °K	°K	°K	°K
Orbit Radius	-	38.000 au	au	au	au
0.1 G Grad	0.051 au	0.054 au	au	au	au
0.0001 G Grad	1.588 au	1.697 au	au	au	au
Inner Life Zone	0.118 au	0.144 au	au	au	au
Optimal Life Zone	0.164 au	0.200 au	au	au	au
Outer Life Zone	0.237 au	0.290 au	au	au	au

Planetary Data

Orbit	Orbit	World Type	Diameter	Gravity	0.001 Grad	0.1 Grad	Sat
I	0.40 au	Failed Core	14,000 km	0.224 G	331,300 km	10,477 km	0
II	0.60 au	Failed Core	25,000 km	0.400 G	790,569 km	25,000 km	0
III	1.02 au	Gas Giant	18,000 km	1.440 G	1,080,000 km	34,153 km	8
IV	2.14 au	Gas Giant	114,000 km	9.123 G	17,216,453 km	544,432 km	5
V	4.71 au	<empty>	km	G	- km	- km	
VI	10.37 au	asteroids	km	G	- km	- km	
	au		km	G	- km	- km	
M0 V	au		km	G	- km	- km	
I	0.70 au	<empty>	km	G	- km	- km	
	au		km	G	- km	- km	
	au		km	G	- km	- km	
	au		km	G	- km	- km	
	au		km	G	- km	- km	
	au		km	G	- km	- km	
	au		km	G	- km	- km	
	au		km	G	- km	- km	
	au		km	G	- km	- km	
	au		km	G	- km	- km	
	au		km	G	- km	- km	

Notes All values for planets and satellites are unoffical.

System Schematic



AS Asteroid
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RK Rock
0.0001 G Grad
Life Zone

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System Name	**Bessieres A**

Planetary Data

World Name	Bessieres A I	Bessieres A II	Bessieres A III			
Orbit, au	0.40	0.60	1.02			
Zone	outer	outer	outer			
Core Type	icy	icy	rocky			
Diameter, km	14,000	25,000	18,000			
Density	0.2	0.2	1.0			
Min MW Retained	29	8	1			
Mass	0.271	1.541	2.875			
Gravity, G	0.224	0.400	1.440			
Atmos Pressure, atm	0.231	0.413	1.488			
Escape Velocity, kps	2.510	4.481	16.133			
Atmos Type	Standard	Dense	Massive			
Actual World Type	Failed Core	Failed Core	Gas Giant			
Water Type	Ice Sheets	Ice Sheets	Crystals			
Water Coverage, %	50 %	30 %	1% in atmos			
Atmospheric Oxygen, atm	none	none	none			
Oxygen Pressure, atm	none	none	none			
Temperature Class	Cold-VCold	Cold-VCold	VCold			
Temperature Range, °C	0° or less	0° or less	-30° or less			
Orbital Period, days	142.6	261.9	580.6			
Rotation Period	50 days	33.7 hours	100 days			
Axial Tilt, °	60.0	28.0	33.0			
Number of Satellites	0	0	8			
0.0001G Gradient, km	331,347	790,681	1,080,153			
0.1G Gradient, km	10,478	25,004	34,157			
Inner Life Zone, km			1032.510528			
Optimal Life Zone, km			1434.0424			
Outer Life Zone, km			2079.36148			
Luminosity			9.20114E-11			

World Name						
Orbit, au						
Zone						
Core Type						
Diameter, km						
Density						
Min MW Retained						
Mass						
Gravity, G						
Atmos Pressure, amt						
Escape Velocity, kps						
Atmos Type						
Actual World Type						
Water Type						
Water Coverage, %						
Atmospheric Oxygen, atm						
Oxygen Pressure, atm						
Temperature Class						
Temperature Range, °C						
Orbital Period, days						
Rotation Period						
Axial Tilt, °						
Number of Satellites						
0.0001G Gradient, km						
0.1G Gradient, km						
Inner Life Zone, km						
Optimal Life Zone, km						
Outer Life Zone, km						
Luminosity						

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System Name	**Bessieres A**

Satellite Data

Satellite Name	Bessieres A IIIc	Bessieres A IIIb	Bessieres A IIIg	Bessieres A IIIf	Bessieres A IIIe	Bessieres A IIId
Zone	outer	outer	outer	outer	outer	outer
Core Type	icy	icy	icy	icy	rocky	rocky
Diameter, km	Ring	3000	Ring	Ring	Ring	Ring
Orbital Radius	1	2	3	5	7	9
Orbital Radius, km	18,000	36,000	54,000	90,000	126,000	162,000
Density	0.6	0.3	0.4	0.6	0.4	1.2
Min MW Retained	vac	vac	vac	vac	vac	vac
Mass	0.000	0.004	0.000	0.000	0.000	0.000
Gravity, G	0.005	0.072	0.003	0.005	0.003	0.010
Atmos Pressure, atm	0.000	0.000	0.000	0.000	0.000	0.000
Escape Velocity, kps	0.054	0.807	0.036	0.054	0.036	0.108
Atmos Type	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
Actual World Type	Ring	Ice Ball	Ring	Ring	Ring	Ring
Water Type	None	Plentiful	None	None	None	None
Water Coverage, %	0 %	60 %	0 %	0 %	0 %	0 %
Atmospheric Oxygen, atm	none	none	none	none	none	none
Oxygen Pressure, atm	none	none	none	none	none	none
Temperature Class	Cold-VCold	Cold-VCold	Cold-VCold	Cold-VCold	Cold-VCold	Cold-VCold
Temperature Range, °C	0° or less	0° or less	0° or less	0° or less	0° or less	0° or less
Orbital Period, days	None	0.4	None	None	None	None
Rotation Period	None	80 days	None	None	None	None
Axial Tilt, °	None	43.0	None	None	None	None
0.0001G Gradient, km	0	40,255	0	0	0	0
0.1G Gradient, km	0	1,273	0	0	0	0
Notes						

Satellite Name	Bessieres A IIIh	Bessieres A IIIa				
Zone	outer	outer				
Core Type	icy	rocky				
Diameter, km	4000	2000				
Orbital Radius	30	55				
Orbital Radius, km	540,000	990,000				
Density	0.1	0.5				
Min MW Retained	vac	vac				
Mass	0.003	0.002				
Gravity, G	0.032	0.080				
Atmos Pressure, amt	0.000	0.000				
Escape Velocity, kps	0.359	0.896				
Atmos Type	Vacuum	Vacuum				
Actual World Type	Ice Ball	Rock				
Water Type	Plentiful	Rare Ice				
Water Coverage, %	60 %	<1 %				
Atmospheric Oxygen, atm	none	none				
Oxygen Pressure, atm	none	none				
Temperature Class	Cold-VCold	Cold-VCold				
Temperature Range, °C	0° or less	0° or less				
Orbital Period, days	26.1	64.7				
Rotation Period	39.12 hours	60 days				
Axial Tilt, °	24.0	17.0				
0.0001G Gradient, km	35,782	28,288				
0.1G Gradient, km	1,132	895				
Notes						

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System Name	**Bessieres A**

Satellite Data

Satellite Name	Bessieres A IV c	Bessieres A IVb	Bessieres A IV e	Bessieres A IV d	Bessieres A IVa	
Zone	outer	outer	outer	outer	outer	
Core Type	rocky	icy	icy	rocky	icy	
Diameter, km	Ring	Ring	300	6000	3000	
Orbital Radius	3	5	30	35	90	
Orbital Radius, km	342,000	570,000	3,420,000	3,990,000	10,260,000	
Density	1.0	0.5	0.3	1.2	0.3	
Min MW Retained	vac	vac	vac	26	vac	
Mass	0.000	0.000	0.000	0.128	0.004	
Gravity, G	0.008	0.004	0.007	0.576	0.072	
Atmos Pressure, atm	0.000	0.000	0.000	0.595	0.000	
Escape Velocity, kps	0.090	0.045	0.081	6.453	0.807	
Atmos Type	Vacuum	Vacuum	Vacuum	Standard	Vacuum	
Actual World Type	Ring	Ring	Chunk	Failed Core	Ice Ball	
Water Type	None	None	Rare Ice	Ice Sheets	Plentiful	
Water Coverage, %	0 %	0 %	<1 %	0 %	30 %	
Atmospheric Oxygen, atm	none	none	none	none	none	
Oxygen Pressure, atm	none	none	none	none	none	
Temperature Class	Cold-VCold	Cold-VCold	Cold-VCold	Cold-VCold	Cold-VCold	
Temperature Range, °C	0° or less	0° or less	0° or less	0° or less	0° or less	
Orbital Period, days	None	None	26.1	32.8	135.4	
Rotation Period	None	None	110.43 hours	120 days	65.47 hours	
Axial Tilt, °	None	None	4.0	15.0	29.0	
0.0001G Gradient, km	0	0	1,273	227,716	40,255	
0.1G Gradient, km	0	0	40	7,201	1,273	
Notes				Outpost (FRA)		

Satellite Name						
Zone						
Core Type						
Diameter, km						
Orbital Radius						
Orbital Radius, km						
Density						
Min MW Retained						
Mass						
Gravity, G						
Atmos Pressure, amt						
Escape Velocity, kps						
Atmos Type						
Actual World Type						
Water Type						
Water Coverage, %						
Atmospheric Oxygen, atm						
Oxygen Pressure, atm						
Temperature Class						
Temperature Range, °C						
Orbital Period, days						
Rotation Period						
Axial Tilt, °						
0.0001G Gradient, km						
0.1G Gradient, km						
Notes						

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