UNIVERSE

Charts & Tables and Logsheets

Note that pages 33 through 44, containing the various logsheets necessary to play *Universe*, should not be marked. Make photocopies of these sheets for use during play, and preserve the originals. SPI grants permission to photocopy these sheets for personal use only

CHARTS & TABLES

LOGSHEETS

UNIVERSE GAMEMASTERS' GUIDE CHARTS & TABLES

[5.1] CHARACTER HERITAGE
Potential Multiplier and Study Points

DIE	POTENTIAL MULTIPLIER	SUM OF POTENTIAL MULTIPLIERS	STUDY POINTS RECEIVED
1	½ (Poor)	4 or fewer	6
2-3	1 (Below Average)	4½ to 6½	5
4-6	2 (Average)	7 to 9½	4
7-9	3 (Above Average)	10 to 11½	3
10	4 (Exceptional)	12 or more	2

To determine potential multiplier for physique, coordination, intellect, and social background, roll one die and locate the result under "Potential Multiplier." After all four potentials are determined, add all four multipliers together to determine how many Study Points the character receives under the "Study Points Received" column.

[5.3] HABITAT TABLE

SECOND DIE ROLL PLUS PHYSIQUE POTENTIAL MINUS COORDINATION POTENTIAL

FIRST DIE RESULT

	1	2	3	4	5	6	7	8	9	10
-3	4:HL-VO NW-HO	6:SF HY-NL	4:FL-CR LT-NL	4:HL-IC NW-NL/1	2:HL-CR NW-NL/2	2:HL-CR HY-NL/2	3:FL-CR LT-NL/1	2:HL-BN HY-CD/2	4:FL-MA HY-NL/1	3:HL-IC NW-NL/3
-2	3:HL-WD LT-NL/1	4:HL-LV NW-NL	4:FL-CR NW-CD/1	3:FL-BN LT-HO/1	4:SF LT-NL/4	2:HL-CR HY-NL/1	3:HL-FT LT-NL/1	4:MN-VO NW-HO/1	3:HL-VO LT-HO/1	2:HL-WD LT-HO/4
-1	4:HL-JU EX-NL	6:FL-LV NW-HO	3:HL-WD LT-NL	3:HL-LV HY-NL/1	4:HL-IC HY-CD/1	2:HL-WD LT-NL/1	4:FL-BN LT-CD	3:PK-WD LT-NL/1	3:MN-LV LT-NL/1	5:SF LT-NL/2
0	5:FL-IC HY-NL	3:HL-CR HY-NL/1	3:FL-JU LT-HO/1	3:HL-VO NW-CD/1	2:MN-LV NW-NL/2	3:MN-CR HY-NL/1	3:MN-WD HY-NL/1	3:FL-WD LT-NL/1	3:MN-VO HY-NL/2	3:HL-VO LT-NL/2
1	4:MN-WD HY-NL	3:MN-LV HY-NL/1	4:PK-FT HY-HO	5:FT-IC HY-CD	2:HL-BN EX-NL/2	4:FL-WD EX-NL	3:HL-BN LT-HO	3:HL-JU LT-NL/2	3:MN-FT LT-NL/1	2:FL-JU HY-NL/3
2	4:MN-WD HY-NL	6:SB HY-NL	3:HL-LV HY-HO/1	2:MN-BN LT-HO/1	4:FL-BN LT-NL	2:FL-LV LT-NL/1	2:FT-LV LT-NL/1	3:MN-FT HY-NL/1	4:FL-WD HY-CD/1	3:MN-CR NW-HO/3
3	5:MN-JU EX-NL	4:HL-LV LT-NL	4:HL-JU HY-HO	3:HL-BN NW-NL/1	6:FL-IC EX-CD	5:IN HY-NL	4:FL-MA HY-NL/2	2:MN-LV LT-NL/1	4:FL-IC HY-NL/1	2:HL-CR LT-NL/2
4	5:HL-IC LT-NL	4:FL-WD HY-HO	2:MN-BN LT-NL/1	4:HL-WD LT-NL	3:FL-CR LT-NL/1	3:FL-WD HY-NL/1	2:HL-BN LT-HO/2	3:HL-LV LT-NL/1	4:MN-VO EX-CD/2	2:HL-LV HY-NL/1
5	4:HL-LV HY-NL	4:FL-BN HY-NL	3:HL-WD LT-NL/1	5:FL-IC HY-NL	3:HL-CR HY-CD/1	5:IN LT-NL/1	3:HL-VO HY-NL/1	2:FL-LV EX-HO/3	3:MN-WD EX-NL/2	1:HL-WD HY-NL/4
6	4:FL-LV HY-CD	4:FL-LV LT-HO	4:PK-LV HY-NL	4:IN LT-NL/1	3:PK-BN HY-HO/1	3:FL-FT LT-CD/2	3:MN-VO EX-NL/1	3:FL-JU HY-HO/1	5:FL-MA EX-HO/2	2:FL-LV NW-HO/4
7	4:MN-WD LT-HO	3:HL-VO LT-NL/1	4:MN-FT HY-NL	2:FL-WD HY-HO/1	3:SB EX-NL/3	3:HL-FT HY-NL/1	3:MN-FT LT-NL/2	3:PK-LV HY-NL/1	3:HL-JU LT-HO/2	2:HL-CR LT-HO/4
8	4:FL-BN HY-NL	4:MN-FT HY-NL	3:FL-FT HY-NL/1	3:MN-FT HY-NL/1	4:HL-WD EX-HO	3:FL-FT LT-CD/1	4:FL-IC HY-NL/1	4:HL-FT EX-CD/1	2:HL-CR HY-NL/1	1:HL-LV HY-NL/2
9	5:SB EX-NL	3:HL-WD HY-NL	4:HL-LV LT-HO	3:HL-LV HY-HO/1	4:FL-IC HY-NL/1	4:FL-IC LT-NL/1	4:SF HY-NL/1	4:MN-JU EX-NL/1	3:HL-VO HY-HO/1	3:HL-FT HY-NL/1
10	5:FL-MA EX-NL	4:FL-JU LT-NL	4:HL-JU LT-HO	4:HL-LV LT-HO	3:FL-WD LT-NL/1	2:MN-LV LT-NL/1	3:HL-WD LT-HO	3:MN-FT NW-NL/1	4:HL-FT EX-HO/2	2:MN-BN HY-NL/2
11	4:FL-JU LT-NL	4:FL-WD HY-CD	3:HL-BN LT-CD/1	4:FL-BN HY-CD	3:HL-FT EX-NL/1	4:MN-LV HY-NL	3:PK-BN LT-NL/1	3:FL-WD LT-CD/1	2:HL-CR EX-NL/2	1:FL-LV LT-CD/3
12	3:HL-BN HY-NL	5:MN-FT EX-CD	3:HL-CR HY-NL/1	3:MN-CR HY-HO/1	5:FL-CR EX-CD	4:FL-WD LT-NL	3:FL-FT HY-HO/1	3:HL-FT LT-CD/1	4:HL-FT EX-HO/1	2:FL-CR LY-CD/3
13	4:MN-CR HY-NL	3:MN-BN LT-NL	3:PK-CR LT-CD/1	3:FL-BN EX-NL/1	4:FL-MA EX-NL/1	3:PK-CR HY-HO/1	2:MN-BN EX-NL/2	4:MN-JU HY-NL/1	2:HL-BN HY-NL/1	3:FL-MA HY-HO/4
14	3:MN-LV EX-NL/1	4:MN-BN EX-NL	4:MN-FT EX-NL	3:MN-VO EX-NL/1	2:HL-WD HY-HO/1	3:HL-LV EX-NL/1	4:HL-VO EX-NL/1	2:FL-LV LT-NL/1	3:FL-WD HY-NL/2	3:FL-LV EX-HO/1

Environ Skill Level:Contour-Feature
Gravity-Temperature/Urban Skill Level (if any)

All abbreviations are explained in the Environ, Gravity, and Temperature sections of Character Record. See 5.2 for explanation of use.

[5.7] SOCIAL STANDING TABLE

MODIFIED DIE RESULT	SOCIAL STANDING	WEALTH: ONE DIE TIMES...	INITIAL SKILL POINT MODIFIER
−1 or less	Unfostered orphan	1 Mil	+3
0	Oppressed minority	10 Mils	0
1,2	Poor colonist family	10 Mils	+1
3	Family falled on hard times	100 Mils	+1
4	Communal colony	10 Mils	+2
5-7	Lower middle class family	100 Mils	0
8-10	Skilled tech family	1 Tran	+1
11-13	Local establishment (business or farm run by family)	1 Tran	−1
14-15	Independent trading family	10 Trans	+2
16-17	Family runs planetary corp	10 Trans	−1
18	Family dominates planet	100 Trans	−2
19	Family dominates star system	100 Trans	−2
20	Family influences entire federation	200 Trans	−3
21	Wealthy dilettante	200 Trans	−4

See 5.6 for explanation of use.

[6.6] CHARACTERISTIC GENERATION TABLE

PERCENTILE DICE RESULT + MODIFIER	CHARACTERISTIC RATING
7 or less	1
8-15	2
16-24	3
25-34	4
35-57	5
58-83	6
84-96	7
97-108	8
109-119	9
120-129	10
130-139	11
140 or more	12

When generating the Mental Power Rating, divide rating by **2** (rounding fractions down). An Agility Rating of less than **5** is considered a **5**. See 6.4 for explanation of use.

[5.8] INITIAL SKILL POINTS

IF THE MODIFIED RESULT IS...	THE CHARACTER RECEIVES...
0 or less	1 Initial Skill Point
1-3	2 Initial Skill Points
4-6	3 Initial Skill Points
7-9	4 Initial Skill Points
10 or more	5 Initial Skill Points

Roll one die and add the Initial Skill Point Modifier (listed with character's social standing on the Social Standing Table) to the die result.

[6.5] CHARACTERISTIC MODIFIER CHART

CHARACTERISTIC► / FIELD OF STUDY	STRENGTH	ENDURANCE	DEXTERITY	AGILITY	INTELLIGENCE	MENTAL POWER	LEADERSHIP	EMPATHY	AGGRESSION
Theoretical Science	0	0	0	0	8	2	0	0	0
Applied Science	0	0	4	0	8	0	0	0	0
Business	0	0	0	0	0	0	2	4	0
Humanities	0	0	0	0	6	2	0	4	−15
The Mind	0	2	0	0	4	6	0	0	−25
The Body	8	4	4	4	0	0	0	0	+15
The Military	4	5	0	4	0	0	5	0	+25
General	1	1	1	1	1	1	1	1	0
TOTAL CALCULATED IN ABOVE COLUMN IS MULTIPLIED BY THESE POTENTIALS►	PHYSIQUE, COORDINATION	PHYSIQUE	COORDINATION, INTELLECT	PHYSIQUE, COORDINATION	INTELLECT	INTELLECT	INTELLECT, SOCIAL BACKGROUND	INTELLECT	

Modifiers are applied to the percentile dice roll for the listed characteristic if the character studied the listed field. All applicable modifiers for a single characteristic are added together. Then the total is multiplied by the Potential Multipliers that apply to that characteristic. See 6.4 for further explanation.

[7.8] PROFESSION TABLES

Employment Table

DIE	DECLARED YEARS OF EMPLOYMENT 4	8	12	16	20
1-2	4	4	8	12	12
3-5	4	8	8	12	16
6-8	4	8	12	12	16
9-10	4	8	12	16	20

A character in the thinker or colonist profession does not use this table. See 7.3 for explanation.

Effects of Age Table

DIE +AGE	PHYSICAL CHARACTERISTIC POINTS LOST
34 or less	0
35, 36	1
37, 38	2
39, 40	3
41, 42	4
43, 44	5
45, 46	6
47 or more	7

See 7.4 for explanation.

Skill Point Table

MODIFIED DIE RESULT	YEARS OF EMPLOYMENT 4	8	12	16	20
2-5	1	4	6	7	7
6-9	2	5	7	8	8
10-13	2	6	8	9	10
14-17	3	6	8	10	11
18-21	3	7	9	11	12
22-26	4	7	10	12	14
27-32	4	8	11	13	15

Roll one die and add the character's Intelligence Rating and the Skill Point Modifier for his profession to the die result. See 7.5 for explanation of use.

Benefits Table

1 DIE + ACTIVE YEARS IN PROFESSION	BENEFIT LEVEL
5-10	A
11-14	B
15-18	C
19-23	D
24-28	E
29-30	F

Explanation of each result is listed in appropriate profession. See 7.7 for explanation of use.

[10.4] PSIONIC BACKLASH TABLE

PERCENTILE DICE RESULT MINUS CHANCE*	EFFECT ON PSIONIC CHARACTER
+10 or less	No effect.
+11 to +20	Shock check (see 30.3).
+21 to +30	Character is automatically shocked.
+31 to +40	Character is shocked; loses one die roll of points from his Endurance Rating.
+41 to +55	Character passes out; Endurance Rating reduced to **0**. Psionic rig suffers superficial damage.
+56 to +70	Character passes out; Endurance Rating reduced to **0**. Mental Power Rating reduced by **1** (see 10.3). Psionic rig suffers heavy damage.
+71 to +85	Character passes out; Endurance Rating reduced to **0**. Mental Power Rating reduced by **2** (see 10.3). Psionic rig suffers heavy damage.
+86 to +100	Character passes out; Endurance Rating reduced to **0**. Mental Power Rating reduced to **1** (see 10.3). The character may use no psionic skills until cured (see 10.5). Psionic rig partially destroyed.
+101 or more	Character is dead. Psionic rig destroyed.

*When checking for psionic backlash after a hyperjump attempt, roll percentile dice and add the modifier from the Hyperjump Table to the dice result. See 10.3 for detailed explanation of use.

[12.3] TREATMENT RESULTS TABLE

TOTAL POINTS LOST	DAYS REQUIRED TO REGAIN ONE CHARACTERISTIC POINT
1, 2	1 Day
3, 4	3 Days
5–7	6 Days
8–10	10 Days
11–14	16 Days
15 or more	24 Days

[13.1] DAMAGE REPAIR TABLE

TYPE OF DAMAGE	BASE REPAIR CHANCE	REPAIR TIME MULTIPLIER
Superficial	50%	×1
Light	20%	×2
Heavy	– 10%	×4
Partially Destroyed	– 40%	×8
Totally Destroyed	Repair Impossible	

[16.4] ROBOT CHASSIS CHART

ROBOT TYPE	STRENGTH	DEXTERITY	AGILITY	PORT CAPACITY	PROJECTILE ARMOR	BEAM ARMOR	HARDWARE POINTS	SOFTWARE SIZE	COST
CIV LEVEL 7									
Brummagen I	17	5	1	350	2	2	2	1	75
Brummagen II	8	2	3	35	1	1	3	1	110
Manner 31b	20	3	5	200	4	4	1	1	70
Manner 36sd	9	8	8	90	2	1	2	2	125
Manner 38sdf	5	1	10	8	2	3	1	2	90
Frazette Blue	1	6	11	3	0	0	1	1	50
CIV LEVEL 8									
Brummagen III	38	12	2	450	5	4	5	6	600
Manner 44	33	4	5	900	5	5	5	4	450
Manner 50sd	20	12	6	60	4	4	2	4	200
Manner 51sdf	18	7	9	15	4	2	5	7	770
Frazette Green	22	9	10	250	4	5	6	4	600
Frazette Amber	18	14	12	150	3	3	4	4	280
Soidistant RAR	21	11	13	550	2	1	6	6	850
Soidistant V-201	8	13	14	5	2	3	3	6	400
Soidistant V-202	32	15	15	700	5	5	6	7	1200

Port Capacity is in kilograms and represents the weight that may be carried. Cost (in Trans) includes cost of the listed hardware and software systems.

[18.0] ACTUAL PRICE TABLE

PERCENTILE DICE RESULT	ACTUAL PRICE OF GOODS (Compared to listed price)
0 or less	50%
1–10	65%
11–20	75%
21–30	85%
31–40	90%
41–50	95%
51–60	100%
61–70	110%
71–80	125%
81–90	145%
91–100	170%
101 or more	200%

MODIFIERS:

–20 if goods contain resources that are abundant on world.

+20 if goods composed only of resources not found on world at all.

+50 if item is one Civ Level higher than that of the world.

- Multiply percentage by **10** if item is two Civ Levels higher than that of the world.
- Multiply percentage by the Law Level of the world if item is illegal (or restricted, if purchaser does not have permit).
- Variable modifier may be applied when using trading skill.

[19.0] WEAPON CHART

RATE OF FIRE	HIT STRENGTH	CIV LEVEL	WEAPON	TERRAIN MULTIPLIER► 0 / RANGE IN HEXES► 0	2 / 1-4	4 / 5-13	6 / 14-25	8 / 26-40	WEIGHT IN KILOGRAMS	PRICE IN TRANS
				BASE HIT CHANCE						
2	8	6	**Paint Gun**	35	25	10	−10	−25	12	7
6	8	8	**Paint Gun**	35	25	10	−10	−25	3	9
4	10	8	**Arc Gun**	20	15	5	−10	−25	4	12
4	5	5	**Pistol[10]**	60	40	0	P	P	2	.08
4	5	6	**Plastic Pistol[9,10]**	60	40	0	P	P	1	.2
2	1	8	**Needle Pistol[3,10]**	55	35	−10	P	P	2	2
1	6	6	**Laser Pistol**	60	40	20	0	−20	4	1
3	6	8	**Laser Pistol**	60	40	20	0	−20	2	2
1	8	7	**Stun Pistol[4]**	65	30	P	P	P	2	1
2	9	8	**Stun Pistol[4]**	65	30	P	P	P	1	2
15	7	5	**Machine Gun[1]**	P	40	20	0	−20	12	3
10	5	6	**Submachine Gun[10]**	40	35	10	0	P	5	2
2	4	2	**Musket[10]**	P	0	−20	−40	P	5	.3
6	7	6	**Rifle[10]**	30	35	20	0	−15	3	.8
4	6	5	**Carbine[10]**	45	35	15	−5	−25	3	.6
1	1	5	**Needle Rifle[3,10]**	40	30	10	−20	P	5	2
2	1	7	**Needle Rifle[3,10]**	40	30	10	−20	P	3	3
3	4	1	**Short Bow[2,10]**	15	25	0[11]	P	P	1	.2
2	6	1	**Long Bow[2,10]**	P	20	10	5[11]	−55[11]	3	.6
1	1	3	**Crossbow**	0	30	10	−15	P	4	.5
1	25	4	**Fragmentation Grenade**	P	50	−10	−60[11]	P	.5	.1
1	4	4	**Smoke Grenade[7]**	P	50	−10	−60[11]	P	.5	.1
1	4	4	**Illumination[8] Grenade**	P	50	−10	−60[11]	P	.5	.1
1	4	4	**Gas Grenade[5]**	P	50	−10	−60[11]	P	.5	.1
1	6	1	**Dagger[6]**	P	10	−30[11]	P	P	.2	.01
na	10	1	**Sword[6]**	P	P	P	P	P	2	.3

NOTES:

1. Must be emplaced before first fire. **2.** May not be fired by prone character. **3.** The target may be affected by substance in needle; see 30.7. **4.** The strength of weapon used to check for stun only; see 30.4 (Terrain Value considered **0**). **5.** Target hex and all adjacent hexes are filled with gas for six Action Rounds; all beings there which do not have their own air supply suffer the effects of the appropriate poison (see 30.7). **6.** Hit Strength is used in close combat; Hit Strength is **3** if thrown. **7.** Target hex and all adjacent hexes are treated as if it were dark for six Action Rounds. **8.** Target hex and all adjacent hexes are treated as if it were light for six Action Rounds. **9.** Will not be detected by metal detector. **10.** Weapon produces recoil with each shot (see 29.6). **11.** Strength Rating of firing (or throwing) character added to hit percentage. **P**: Prohibited.

[20.0] PROTECTIVE ATTIRE CHART

TYPE	CIV LEVEL	WEIGHT (Kilograms)	PRICE (Trans)	AIR SUPPLY (Hours)	ENCUMBRANCE	PROJECTILE DEFENSE	BEAM DEFENSE	HIT STRENGTH
ARMOR								
Reflective	**6**	11	15w	12	2	1	3	2
Reflective	**8**	9	28w	24	1	2	5	5
Impact	**5**	22	9	None	5	2	1	9
Impact	**7**	18	31w	18	3a	4	2	18
Reflective/Impact	**7**	20	31w	18	4a	3	4	11
Reflective/Impact	**8**	16	46w	24	2a	5	5	20
Armor Vest	**6**	2	1.5	None	None	2p	2p	None
Respirator Helmet	**6**	6	4	12	None	2p	2p	None
Respirator Helmet	**8**	4	10	24	None	4p	4p	None
Battle Sleeve	**8**	4	15w	None	None	5p	5p	25
FORCE FIELD								
Force Field On	**8**	2	55	None	Imm	6	0	Imm
Force Field Off	**8**	2	55	None	None	0	0	None
EXPEDITION SUIT								
Expedition Suit	**6**	11	6	12	2	1	1	None
Expedition Suit	**7**	7	11w	24	1	1	1	None

w: Waiting period of one week required upon purchase. *Exception:* Waiting period for battle sleeve is two days. **a**: Movement of wearer may be augmented, depending on Body Armor Skill Level. **p**: Provides partial protection only. **Imm**: Wearer may not move at all. He may not attack or fire any type of weapon except a beam weapon.

[21.2] MARINE VEHICLE CHART

VEHICLE / ASSOCIATED SUB-SKILL	CIV LEVEL	PRICE (Trans)	RANGE (x 100km)	SPEED (km/hr)	SPEED (Hexes/Action Round)	PASSENGERS	CARGO CAPACITY (x 100kg)	PERFORMANCE MODIFIER	REPAIR TIME (Days)	ARMOR (Projectile/Beam)	LENGTH (Meters)
Sailing Ship	3	90	U	10	5	8	4	−20	1	3/2	12
Mini Submarine	6	300	15	25	15	3	1	+5	1	3/2	4
Flexicraft MOTORBOAT	6	1000	150	100	60	20	50	+15	6	2/4	40
Reef Walker SUBMARINE	7	600	20	20	10	6	15	+5	2	3/3	18
Water Scooter MOTORBOAT,SUB	7	5	1	15	10	1	.2	+15	1	1/1	2
Amphibian[L] MOTORBOAT,SUB	6	180	20	25	15	4	3	−15	1	3/2	5

L: See Land Vehicle Chart for further details. **U**: Unlimited range. Where more than one associated sub-skill is listed, use the one appropriate to current use of vehicle.

[21.1] LAND VEHICLE CHART

VEHICLE ASSOCIATED SUB-SKILL	CIV LEVEL	PRICE (Trans)	RANGE (×100km)	SPEED (km/hr)	SPEED (Hexes/Action Round)	TERRAIN VALUE LIMIT	TERRAIN VALUE MODIFIER	PASSENGERS	CARGO CAPACITY (×100kg)	PERFORMANCE MODIFIER	REPAIR TIME (Hours)	ARMOR (Projectile/Beam)	LENGTH (Meters)
Scout Car ATV	5	35	12.5	25	15	3	0	5	4	−10	6	2/2	5
Crawler ATV													
Wheeled	8	200	100	45	25	3	−1	8	5	+25	24	4/3	7
Legs	8	200	100	10	5	N	N	8	5	+25	24	4/3	7
Rover ATV	8	150	300	75	45	4	−2	2	1	+25	24	3/3	5
Mobile Lab ATV	8	250	100	50	30	2	+1	9	25	+15	24	4/3	10
Amphibian[m] ATV	6	180	20	25	15	3	+1	4	3	−15	24	3/2	5
Van Rig TRUCK	6	240	24	100	65	1	+2	5	150	−10	12	3/2	8
Car AUTOMOBILE	5	40	10	200	120	1.5	0	3	1	−25	6	1/1	5
Horse Cart ANIMAL DRAWN	1	1	U	10a	15a	2	+2	6	2	−15	2	1/1	4
AutoSled	6	60	15	25	15	3	0	2	1	0	6	2/2	4
Tractor	5	35	5	15	10	4	−1	1	100	−20	6	1/1	5
Half-Track	7	1000	50	25	15	2	−2	8	4	0	24	4/4	7
Loricate APC	6	700	50	50	30	1.5	+1	12	6	+5	24	5/4	8
Armored ATV	6	200	15	75	45	3	−1	6	1	+15	24	5/5	5
Tank	6	2000	50	50	30	3	0	4	2	+20	24	6/6	6
Self-Propelled Artillery	5	2000	10	25	15	2	+1	3	1	0	24	6/5	7

a: Speed in km/hr represents a pace which the animal may maintain over a long period of time. Speed in hexes/Action Round represents the maximum speed which can be maintained for a short period of time.

m: See Marine Vehicle Chart for further details.
U: Unlimited range.
N: None.

[21.3] AIR VEHICLE CHART

VEHICLE ASSOCIATED SUB-SKILL	CIV LEVEL	PRICE (Trans)	RANGE (×100km)	SPEED (×100km/hr)	MAXIMUM WORLD SIZE BY ATMOSPHERE: TRACE OR NONE	THIN	OTHERS	PASSENGERS	CARGO CAPACITY (×100kg)	PERFORMANCE MODIFIER	REPAIR TIME (Days)	ARMOR (Projectile/Beam)	LENGTH (Meters)
Dragonfly GLIDER	6	5	1	.1	P	3	5	1	.1	−25	.5	1/1	2
Ornithopter GLIDER	8	300	200	15	P	4	7	12	12	0	1	1/1	20
Propeller Plane	5	200	40	5	P	3	7	5	25	−5	.5	2/2	8
Jet	7	1000	600	9	P	3	9	8	50	+25	2	3/3	25
Air Car JET	8	1300	10	7	P	6	9	3	2	+20	1	3/2	5
Levitator DIRECT LIFT	7	4000	U	.3	6m	6m	6m	100	100	0	10	4/4	40
Floater DIRECT LIFT	8	400	U	.4	6m	6m	6m	10	5	+25	6	1/1	8
Skimmer DIRECT LIFT	8	500	U	.6	7m	7m	7m	5	3.5	+10	7	1/1	5
Helicopter	6	150	20	1	P	3	6	6	5	−20	1	2/3	5
Shuttle SHUTTLE OR PILOT	7	8000	640	20	8	8	8	40	200	+10	5	4/4	120

P: Prohibited
U: Unlimited range; overhaul required once per year at a cost of 100 Trans.
m: Cannot be used on a world Size 3 or less.

[22.0] PERSONAL EQUIPMENT CHART

	CIV LEVEL	WEIGHT (Kilograms)	PRICE (Trans)	SKILL PLUS	TIME NEEDED FOR USE	BASE REPAIR TIME
SCIENTIFIC						
Geo Lab	5	15	1	0	2 hr	1 hr
Geo Scanner	6	25	6	0	1 hr	1 hr
Geo Scanner	8	7	15	+2	.5 hr	2 hr
First Aid Kit	4	5	1	0	1 hr	1 hr
Medi Scanner	6	10	12	+1	.5 hr	1 hr
Medi Scanner	8	5	10	+2	.3 hr	2 hr
Bio Scanner	7	7	8	0	(a)	1 hr
Bio Scanner	8	2	12	+1	(a)	2 hr
Neuro Scanner	8	5	18	na	None	2 hr
Chem Lab	5	20	2	0	1 hr	1 hr
Chem Lab	7	15	7	+1	.5 hr	1 hr
Chem Synthesizer	6	25	2	0	4 hr	1 hr
Chem Synthesizer	8	22	6	+2	2 hr	2 hr
Energy Scanner	7	5	10	0	(a)	1 hr
TECH KITS						
Basic Repair Kit	5	5	1	0	(b)	na
Suit Kit	7	2	2	0	(b)	na
Armor Kit	7	15	20	+1	(b)	na
Armor Kit	8	15	30	+2	(b)	na
Weapon Kit	6	7	2	+1	(b)	na
Weapon Kit	8	7	4	+2	(b)	na
Electro Kit	7	5	11	+1	(b)	na
Electro Kit	8	5	15	+2	(b)	na
Robot Kit	8	15	30	+1	(a)	na
Vehicle Kit	6	30	25	+1	(b)	na
Vehicle Kit	8	30	35	+2	(b)	na
Spaceship Kit	6	100	60	0	(b)	na
Spaceship Kit	7	100	75	+1	(b)	na
Spaceship Kit	8	100	100	+2	(b)	na

	CIV LEVEL	WEIGHT (Kilograms)	PRICE (Trans)	SKILL PLUS	TIME NEEDED FOR USE	BASE REPAIR TIME
COMMUNICATIONS						
Headset Radio	5	1	.2	+1	na	1 hr
Planetary Shortwave	5	20	.4	0	na	1 hr
Interplanetary Radio Dish	7	5	2	0	na	1 hr
Planetary Headset	8	1	2	+1	na	2 hr
Interstellar Commlink	8	1	2	na	na	2 hr
Translator	7	2	16	+1	None	1 hr
Translator	8	1	48	+2	None	2 hr
RECORDING EQUIPMENT						
Audio Recorder	5	2	.1	na	AR	1 hr
Still Camera	4	5	.1	na	AR	1 hr
Superoid Camera	5	7	.4	na	AR	1 hr
Holographer	7	25	3	na	AR	1 hr
CAGES						
Metal Cage 0.5m³	2	2	.1	na	na	1 hr
Metal Cage 8 m³	2	50	.5	na	na	1 hr
Super Cage 0.5m³	5	1	.2	na	na	1 hr
Super Cage 8 m³	5	30	1	na	na	1 hr
Force Cage	8	3	20	na	AR	2 hr
VISION EQUIPMENT						
Night Glasses	7	.3	3	na	na	1 hr
Rocket Flare	5	.5	.1	na	AR	na
Anaerobic Torch	6	.5	.1	na	AR	na
Flashlight	4	.5	.1	na	AR	1 hr
Binoculars	5	1	.1	na	na	1 hr

na: Not applicable. **AR**: Activation takes one Action Round. **(a)**: See 12.0 for explanation. **(b)**: See 13.1 for explanation.

[23.6] MOON TABLES

Moon Generation Table

	PLANET SIZE						
DIE	3	4	5	6	7	8	9
1,2	0	0	0	0	0	0	0
3,4	0	0	0	0	1	1	1
5,6	0	0	1	1	2	2	3
7,8	0	1	1	2	3	4	5
9	1	1	2	3	4	5	6
10	1	2	3	4	5	6	7

Results are number of moons orbiting planet. A Size 1 or 2 planet may possess no moons, nor may a moon. See 23.6 for explanation.

Moon Type Table

	MOON SIZE			
DIE	0,1	2	3	4,5
1	Hr	Tr	Er	Ep
2	Hp	Tp	Ep	Ep
3	Hr	Op	Tr	Er
4	Hp	Hr	Tp	Tr
5	Hr	Hp	Op	Tp
6	Hp	Hr	Hp	Tr
7	Hr	Hp	Hr	Or
8	Hp	Hr	Hp	Hp
9	Hr	Hp	Hr	Hp
10	Hp	Hr	Hp	Hr

E: Earth-like. **T**: Tolerable. **H**: Hostile. **O**: Ring. **r**: Resource rich. **p**: Resource poor.

Subtract **2** *or add* **2** to die result depending on whether moon's planet is in or out of biosphere.

If moon is in hostile zone of star system, do not roll; cross-reference moon size with **10** row to yield moon type. Treat all modified rolls of less than **1** as **1**, and all rolls of greater than **10** as **10**.

Moon Size Table

1 DIE + PLANET SIZE	MOON SIZE	1 DIE + PLANET SIZE	MOON SIZE
4-8	0	16-17	3
9-12	1	18	4
13-15	2	19	5

[23.5] PLANET SIZE AND TYPE TABLE

SECOND DIE \ FIRST DIE	1	2	3	4	5	6	7	8	9	10
1	3: Er	4: Ep	4: Er	4: Er	4: Er	4: Er	5: Er	5: Ep	7: Ep	7: Er
2	3: Ep	3: Ep	4: Er	4: Er	4: Er	4: Er	5: Er	8: Er	8: Ep	8: Ep
3	4: Er	4: Ep	4: Ep	5: Er	5: Er	5: Ep	5: Er	5: Ep	7: Er	7: Ep
4	2: Tr	3: Tp	3: Tp	3: Tr	6: Er	6: Er	6: Er	6: Er	6: Ep	6: Ep
5	2: Tp	3: Tr	3: Tr	4: Tr	4: Tr	4: Tp	5: Tr	5: Tr	8: Tr	8: Tp
6	1: Hr	3: Tp	3: Tp	A:Hr	4: Tp	4: Tp	5: Tr	5: Tp	A:Hp	8: Tp
7	1: Hr	2: Hr	4: Hr	4: Hr	A:Hr	5: Tp	5: Tp	A:Hp	A:Hr	6: Tr
8	1: Hr	2: Hr	3: Hr	A:Hr	4: Hp	A:Hr	5: Tp	4: Hp	A:Hr	6: Tp
9	1: Hr	2: Hr	2: Hr	2: Hr	3: Hr	3: Hr	6: Tr	6: Tp	8: Tr	6: Tp
10	1: Hp	2: Hp	3: Hp	A:Hp	5: Hp	6: Hr	7: Hp	8: Hp	7: Tr	9: Hr

#: Planet size. **E**: Earth-like; **T**: Tolerable; **H**: Hostile; **A**: Asteroid belt. **r**: Resource Rich; **p**: Resource Poor.

Modifiers:

Add or subtract Planet Size Modifier (see Star System Log) from first die result.

***Subtract* 2** from second die if planet is in biosphere.

***Add* 2** to second die if planet is not in biosphere and not in hostile zone.

Do not roll second die if planet is in hostile zone (see Star System Log); use **10** row of the table and first die result to obtain planet size and type.

Treat all modified rolls of less than **1** as **1**, and all modified die rolls of more than **10** as **10**.

See 23.5 for detailed explanation of use.

[23.4] PLANET CREATION TABLE

SPECTRAL CLASS OF STAR	PLANET EXISTS AT POSITION IF 2-DICE RESULT IS...
A (0 THROUGH 4)	2–5
A (5 THROUGH 9)	2–7
F (0 THROUGH 4)	2–8
F (5 THROUGH 9)	2–9, 17
G (0 THROUGH 4)	2–11
G (5 THROUGH 9)	2–10
K (0 THROUGH 4)	2–9
K (5 THROUGH 9)	2–7, 17
M (0 THROUGH 4)	2–6
M (5 THROUGH 9)	2–3

See 23.4 for explanation of use.

[23.7] WORLD GRAVITY TABLE

WORLD SIZE	GRAVITY
0	None
1	Trace
2	0.2
3	0.4
4	0.7
5	1.0
6	1.3
7	1.7
8	2.0
9	2.5

[24.6] WORLD DAY LENGTH TABLE (Optional)

Numbers represent length of day in hours (including daylight and darkness). **d**: Day measured in Earth days. **N**: No rotation. See 24.6 for explanation of use.

ONE DIE	WORLD TYPE: EARTH-LIKE	TOLERABLE	HOSTILE
1	12	6	4
2	15	9	6
3	18	12	8
4	21	15	N
5	24	18	N
6	24	24	72
7	27	36	4d
8	30	48	6d
9	33	60	8d
10	36	72	10d

[24.2] WORLD ATMOSPHERE TABLE

DIE + WORLD SIZE	WORLD TYPE: EARTH-LIKE	TOLERABLE	HOSTILE
3-5	Thin	None	None
6	Thin **(C)**	Thin **(C)**	None
7	Normal	Thin	None
8	Thin **(C)**	Poison	None
9	Thin	Thin **(C)**	Poison
10	Thin	Poison	Corrosive
11	Normal	Thin	Poison
12	Normal **(C)**	Corrosive	Corrosive
13	Poison	Thin **(C)**	Poison
14	Normal	Poison	Corrosive
15	Normal **(C)**	Normal **(C)**	Poison
16	Normal	Normal **(C)**	Corrosive
17	Normal	Poison	Poison
18	Normal **(C)**	Poison	Corrosive
19	Normal	Normal **(C)**	Poison

A world of size **0** or **1** automatically possesses no atmosphere.
(C): Contaminated. See 24.2 for explanation of use.

[24.3] WORLD TEMPERATURE TABLE

DIE	WORLD TYPE: EARTH-LIKE	TOLERABLE	HOSTILE
−4, −5	125	175	200 or above
−2, −3	100	150	200
−1, 0	100	125	175
1, 2	75	125	175
3, 4	75	100	150
5, 6	50	25	−25
7, 8	50	0	−25
9, 10	25	0	−50
11, 12	25	−25	−50
13, 14	0	−25	−75
15, 16	0	−50	−75 and below

Results represent average temperature of the world; all temperatures are expressed in °F. See 24.3 for explanation.

Die Roll Modifiers:

If the planet is closer to the star than the star's biosphere, *subtract* **6** from the die roll.

If the planet is further from the star than the star's biosphere, *add* **6** to the die roll.

[continued on page 45]

CHARACTER RECORD

Character Name _____ **Age** ___ **Sex** ___ **Player Name** _____

Potentials: Physique ___ Coordination ___ Intellect ___ Social Background ___ **Study Points** ___ **Social Standing** _____

Initial Skill Pts ___ **Fields of Study:** _____

Characteristics: Strength **(ST)** _____ Endurance **(EN)** _____ Dexterity **(DX)** _____ Agility **(AY)** _____

Intelligence **(IN)** _____ Mental Power **(MP)** _____ Leadership **(LD)** _____ Empathy **(EM)** _____ Aggression **(AG)** _____

Profession _____ **Skill Pts** ___ **Benefit Level** ___ **Money:** Trans _____ Mils _____

SKILLS (Level Limit/Characteristic Limit)

Military Skills	Level	EP's
Ambush **7/AY**		
Artillery **6/IN**		
Battlefield **6/LD**		
Blades **7/DX**		
Body Armor **6/AY**		
Demolitions **6/DX**		
EVA **6/AY**		
Jetpack **6/AY**		
Unarmed Combat **8/AY**		
Arc Gun **8/DX**		
Bows **7/DX**		
Handguns **5/DX**		
Grenades **8/DX**		
Laser/Stun Pistol **5/DX**		
Longarms **6/DX**		
Machine Guns **5/DX**		
Paint Gun **7/DX**		
Gunnery **9/DX**		
Missile Guidance **9/IN**		
Pilot **9/IN**		
Space Tactics **9/LD**		

Psionic Skills	Level	EP's
Life Sense **8/IN**		
Mind Control **9/IN**		
Navigation **9/IN**		
Psionic Boost **8/IN**		
Psionic Communication **8/IN**		
Psychokinesis **9/IN**		
Psion Tech **8/DX**		

Vehicle Skills	Level	EP's
Air Vehicles **9**		
• Direct Lift		
• Glider		
• Helicopter		
• Jet Plane		
• Propeller Plane		
• Shuttle		
Ground Vehicles **9**		
• All-Terrain Vehicle		
• Animal Drawn		
• Automobile		
• Sled		
• Tractor		
• Truck		
Marine Vehicles **9**		
• Motorboat		
• Oar Boat		
• Sailing Ship		
• Submarine		
• Supervessel		
Military Vehicles **9**		
• Armed All-Terrain Vehicle		
• Armored Personnel Carrier		
• Half Track		
• Self-Propelled Artillery		
• Tank		
_____		
_____		
_____		

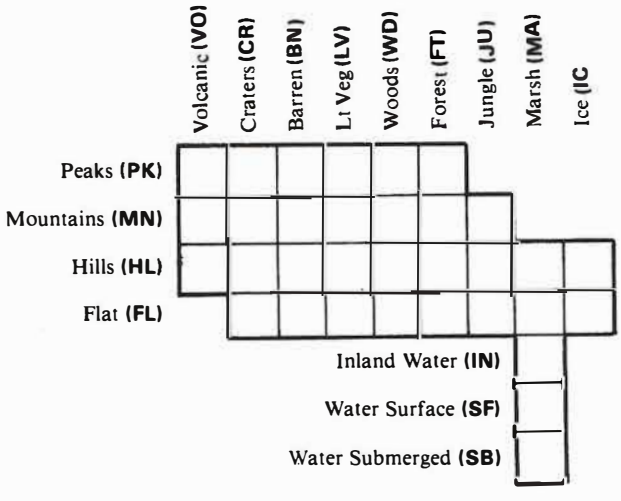
Scientific Skills	Level	EP's
Astronomy **6/IN**		
Biology **9/IN**		
Chemistry **9/IN**		
Diagnosis **9/IN**		
Geology **7/IN**		
Physics **6/IN**		
Planetology **7/IN**		
Programming **8/IN**		
Treatment **9/IN**		

Technical Skills	Level	EP's
Compu/Robot Tech **9/IN**		
Construction **6**		
Electro Tech **8/DX**		
Energy Tech **6/DX**		
Spaceship Tech **9/IN**		
Suit Tech **8/DX**		
Vehicle Tech **8/DX**		
Weapon Tech **8/DX**		

Interpersonal Skills	Level	EP's
Diplomacy **6/EM**		
Disguise **8/DX**		
Economics **8/IN**		
Forgery/Counterfeiting **8/DX**		
Gambling **6/IN**		
Law **8/IN**		
Linguistics **8/IN**		
Recruiting **6/EM**		
Streetwise **4/EM**		
Teaching **6/EM**		
Trading **6/EM**		

Environmental Skills	Level	EP's
Agriculture **8**		
Asteroid Mining **6**		
Mining **6**		
Survival **8/IN**		

ENVIRON SKILL DISPLAY



Urban Skill Level

_____

Gravity Skill Levels

0.0–0.4G **(NW)**

0.7–1.0G **(LT)**

1.3–1.7G **(HY)**

2.0–2.5G **(EX)**

Temperature Range

_____ –50–0° **(CD)**

_____ 25–100° **(NL)**

_____ 125–175° **(HO)**

POSSESSIONS

_____

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CHARACTER RECORD

Character Name _____ **Age** ___ **Sex** ___ **Player Name** _____

Potentials: Physique ___ Coordination ___ Intellect ___ Social Background ___ **Study Points** ___ **Social Standing** _____

Initial Skill Pts ___ **Fields of Study:** _____

Characteristics: Strength **(ST)** _____ Endurance **(EN)** _____ Dexterity **(DX)** _____ Agility **(AY)** _____

Intelligence **(IN)** _____ Mental Power **(MP)** _____ Leadership **(LD)** _____ Empathy **(EM)** _____ Aggression **(AG)** _____

Profession _____ **Skill Pts** ___ **Benefit Level** ___ **Money:** Trans _____ Mils _____

SKILLS (Level Limit/Characteristic Limit)

Military Skills	Level	EP's
Ambush **7/AY**		
Artillery **6/IN**		
Battlefield **6/LD**		
Blades **7/DX**		
Body Armor **6/AY**		
Demolitions **6/DX**		
EVA **6/AY**		
Jetpack **6/AY**		
Unarmed Combat **8/AY**		
Arc Gun **8/DX**		
Bows **7/DX**		
Handguns **5/DX**		
Grenades **8/DX**		
Laser/Stun Pistol **5/DX**		
Longarms **6/DX**		
Machine Guns **5/DX**		
Paint Gun **7/DX**		
Gunnery **9/DX**		
Missile Guidance **9/IN**		
Pilot **9/IN**		
Space Tactics **9/LD**		

Psionic Skills	Level	EP's
Life Sense **8/IN**		
Mind Control **9/IN**		
Navigation **9/IN**		
Psionic Boost **8/IN**		
Psionic Communication **8/IN**		
Psychokinesis **9/IN**		
Psion Tech **8/DX**		

Vehicle Skills	Level	EP's
Air Vehicles **9**		
• Direct Lift		
• Glider		
• Helicopter		
• Jet Plane		
• Propeller Plane		
• Shuttle		
Ground Vehicles **9**		
• All-Terrain Vehicle		
• Animal Drawn		
• Automobile		
• Sled		
• Tractor		
• Truck		
Marine Vehicles **9**		
• Motorboat		
• Oar Boat		
• Sailing Ship		
• Submarine		
• Supervessel		
Military Vehicles **9**		
• Armed All-Terrain Vehicle		
• Armored Personnel Carrier		
• Half Track		
• Self-Propelled Artillery		
• Tank		
_____		
_____		
_____		

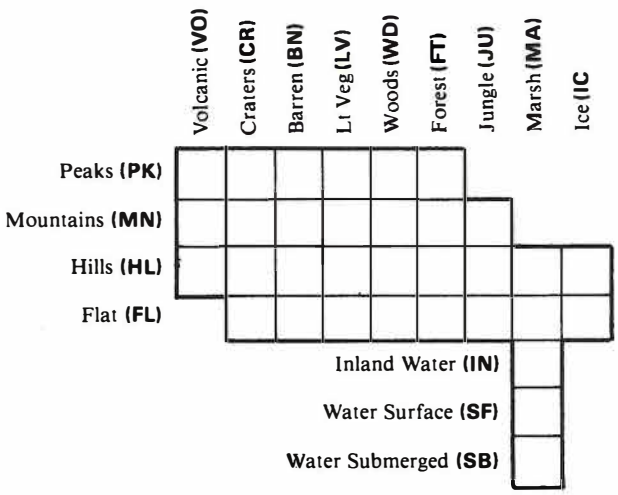
Scientific Skills	Level	EP's
Astronomy **6/IN**		
Biology **9/IN**		
Chemistry **9/IN**		
Diagnosis **9/IN**		
Geology **7/IN**		
Physics **6/IN**		
Planetology **7/IN**		
Programming **8/IN**		
Treatment **9/IN**		

Technical Skills	Level	EP's
Compu/Robot Tech **9/IN**		
Construction **6**		
Electro Tech **8/DX**		
Energy Tech **6/DX**		
Spaceship Tech **9/IN**		
Suit Tech **8/DX**		
Vehicle Tech **8/DX**		
Weapon Tech **8/DX**		

Interpersonal Skills	Level	EP's
Diplomacy **6/EM**		
Disguise **8/DX**		
Economics **8/IN**		
Forgery/Counterfeiting **8/DX**		
Gambling **6/IN**		
Law **8/IN**		
Linguistics **8/IN**		
Recruiting **6/EM**		
Streetwise **4/EM**		
Teaching **6/EM**		
Trading **6/EM**		

Environmental Skills	Level	EP's
Agriculture **8**		
Asteroid Mining **6**		
Mining **6**		
Survival **8/IN**		

ENVIRON SKILL DISPLAY



Urban Skill Level

_____

Gravity Skill Levels

0.0–0.4G **(NW)**

0.7–1.0G **(LT)**

1.3–1.7G **(HY)**

2.0–2.5G **(EX)**

Temperature Range

_____ −50–0° **(CD)**

_____ 25–100° **(NL)**

_____ 125–175° **(HO)**

POSSESSIONS

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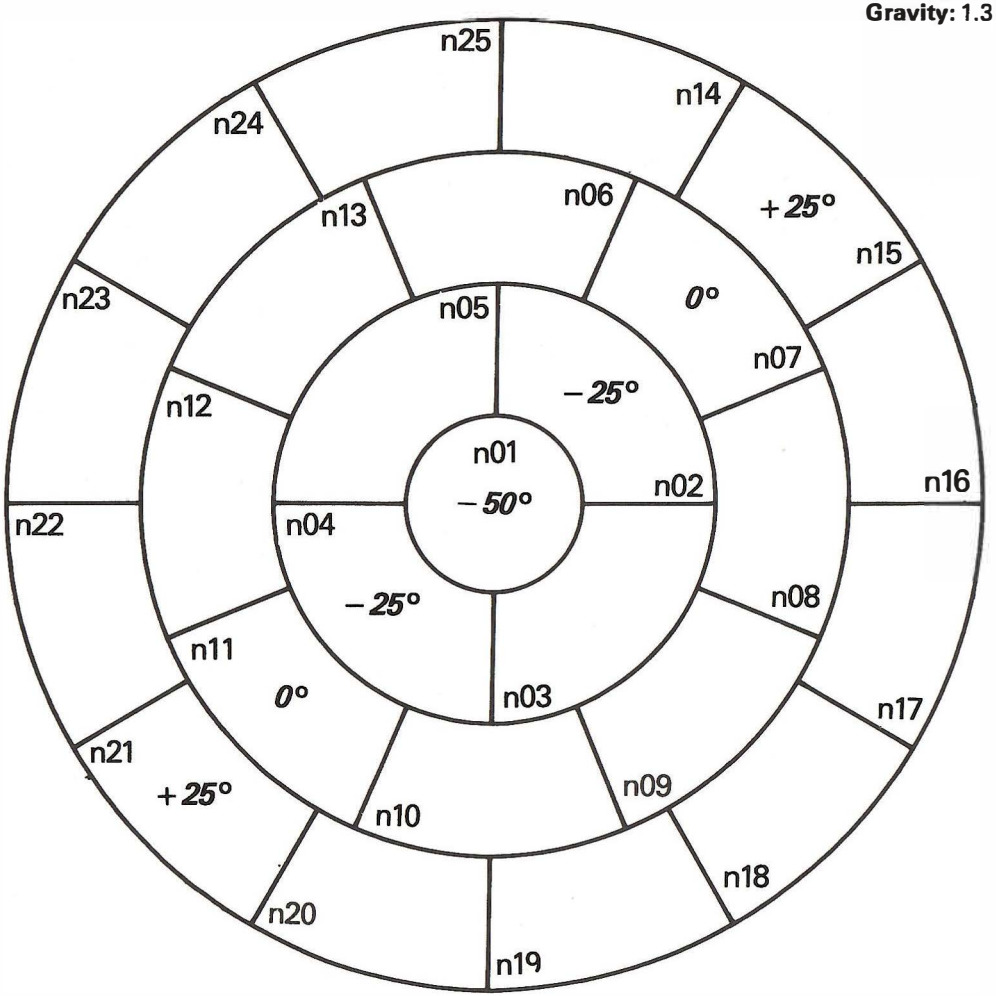
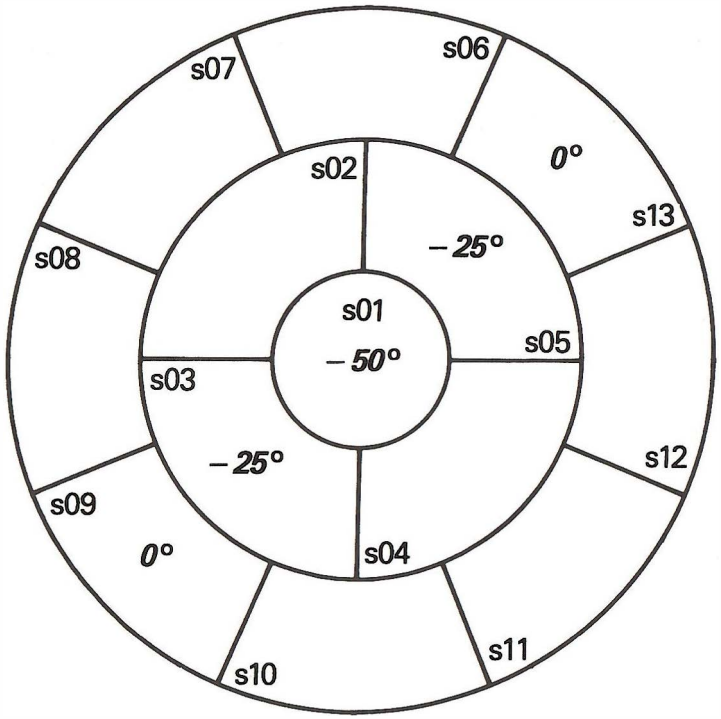
WORLD LOG: Size 6

Gravity: 1.3 (HY) **Action Round Movement:** −2





NAME _____ TYPE _____ MOONS (nr.) _____

DISTANCE FROM STAR _____ ATMOSPHERE _____ MEAN TEMP _____

HYDROGRAPH _____ DAY LENGTH _____ HUMAN POPULATION _____

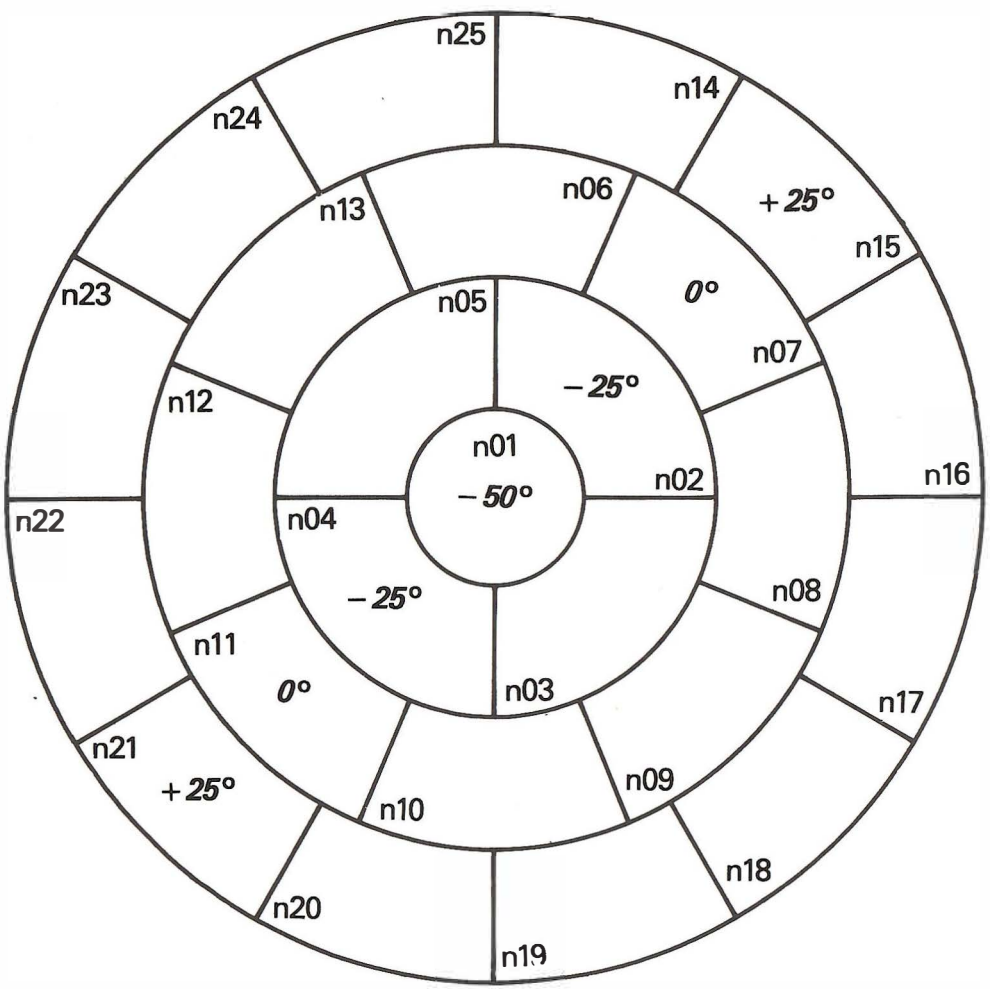
SETTLEMENT STATUS _____ LAW LEVEL _____ CIV LEVEL _____

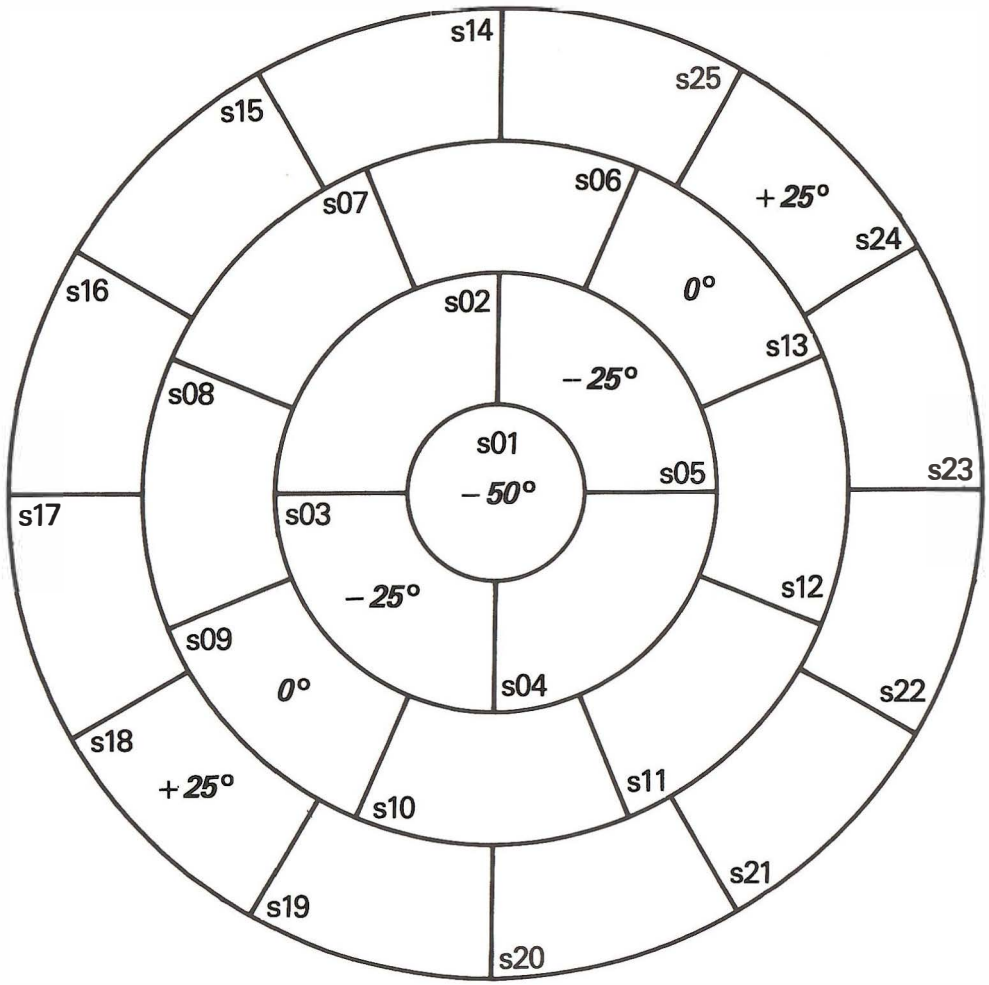
SPACEPORT CLASS _____ RESOURCES _____

REMARKS _____

WORLD LOG: Size 7

Gravity: 1.7 (HY) Action Round Movement: −4





NAME _____ TYPE _____ MOONS (nr.) _____

DISTANCE FROM STAR _____ ATMOSPHERE _____ MEAN TEMP _____

HYDROGRAPH _____ DAY LENGTH _____ HUMAN POPULATION _____

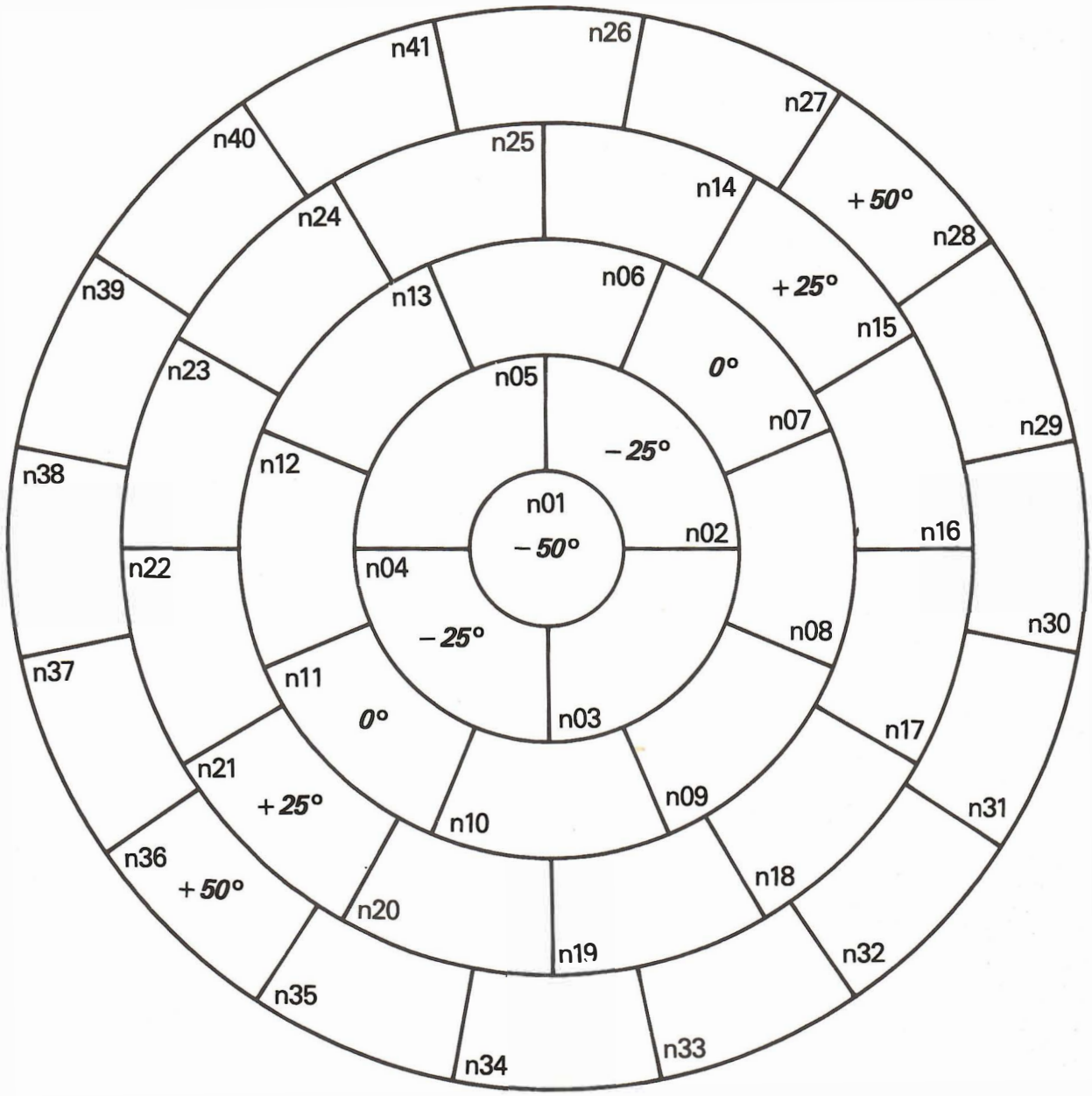
SETTLEMENT STATUS _____ LAW LEVEL _____ CIV LEVEL _____

SPACEPORT CLASS _____ RESOURCES _____

REMARKS _____

WORLD LOG: Size 8

Gravity: 2.0 **(EX)** **Action Round Movement:** −6



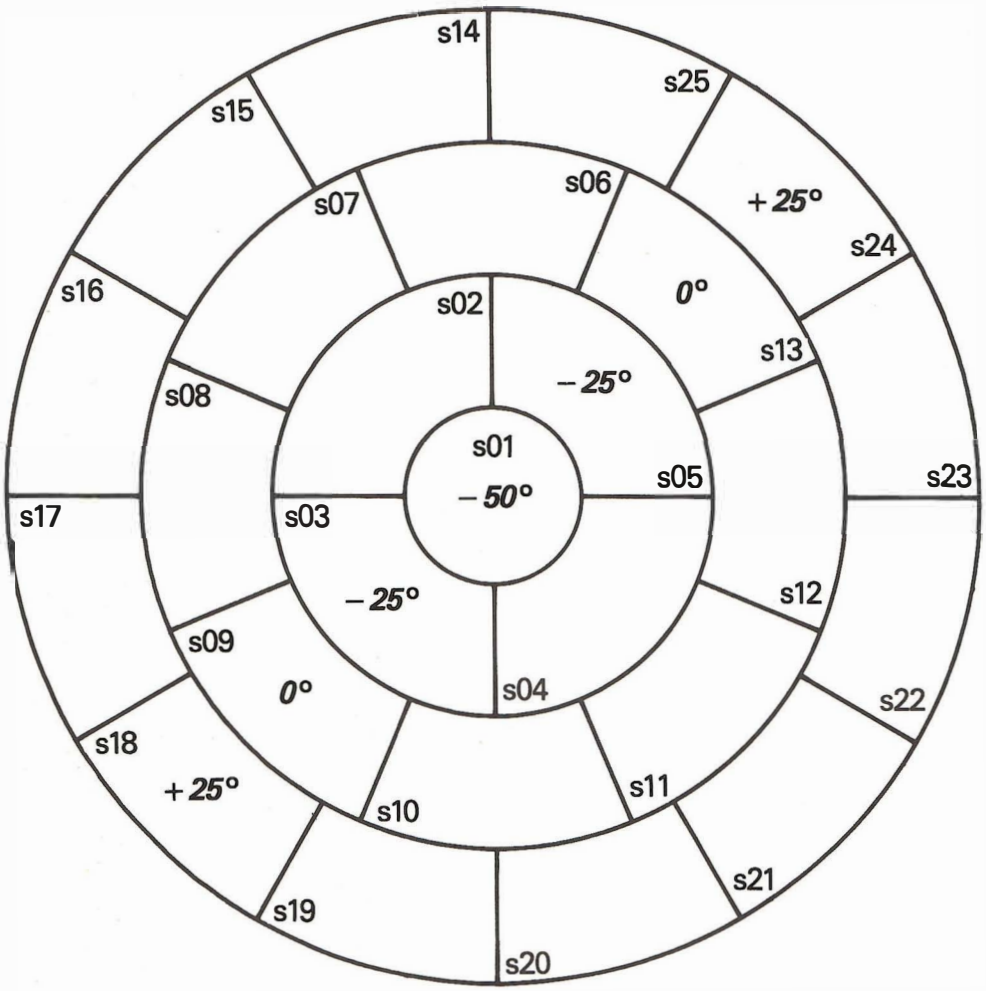
NAME _____ TYPE _____ MOONS (nr.) _____

DISTANCE FROM STAR _____ ATMOSPHERE _____ MEAN TEMP _____

HYDROGRAPH _____ DAY LENGTH _____ HUMAN POPULATION _____

SETTLEMENT STATUS _____ LAW LEVEL _____ CIV LEVEL _____

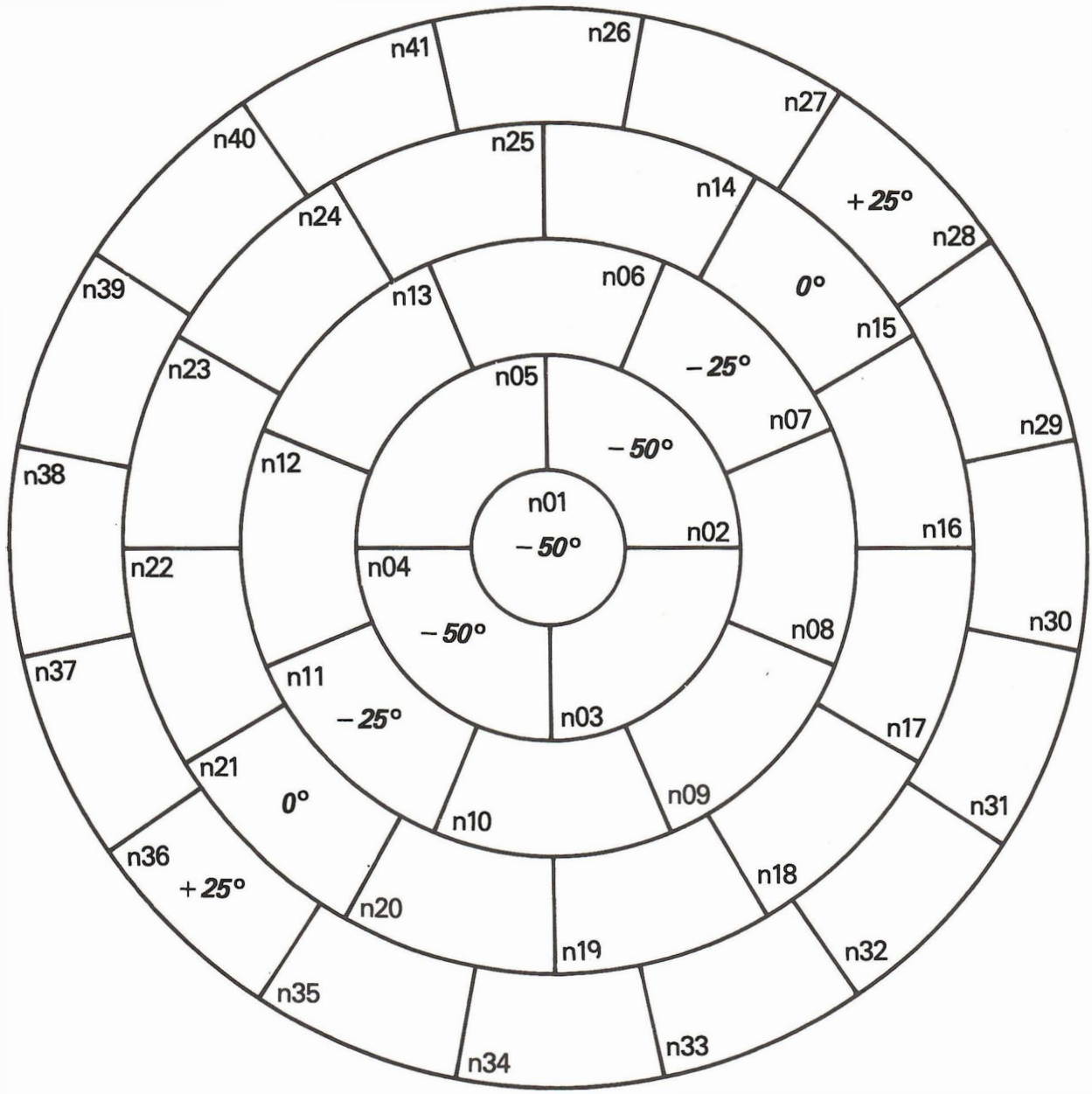
SPACEPORT CLASS _____ RESOURCES _____


s14
s25
s15
s06
+25°
s07
s24
0°
s16
s02
s13
−25°
s08
s01
s05
s23
−50°
s17
s03
s12
−25°
s09
s04
s22
0°
s18
s11
+25°
s10
s21
s19
s20

REMARKS _____

WORLD LOG: Size 9

Gravity: 2.5 (EX) **Action Round Movement:** −8



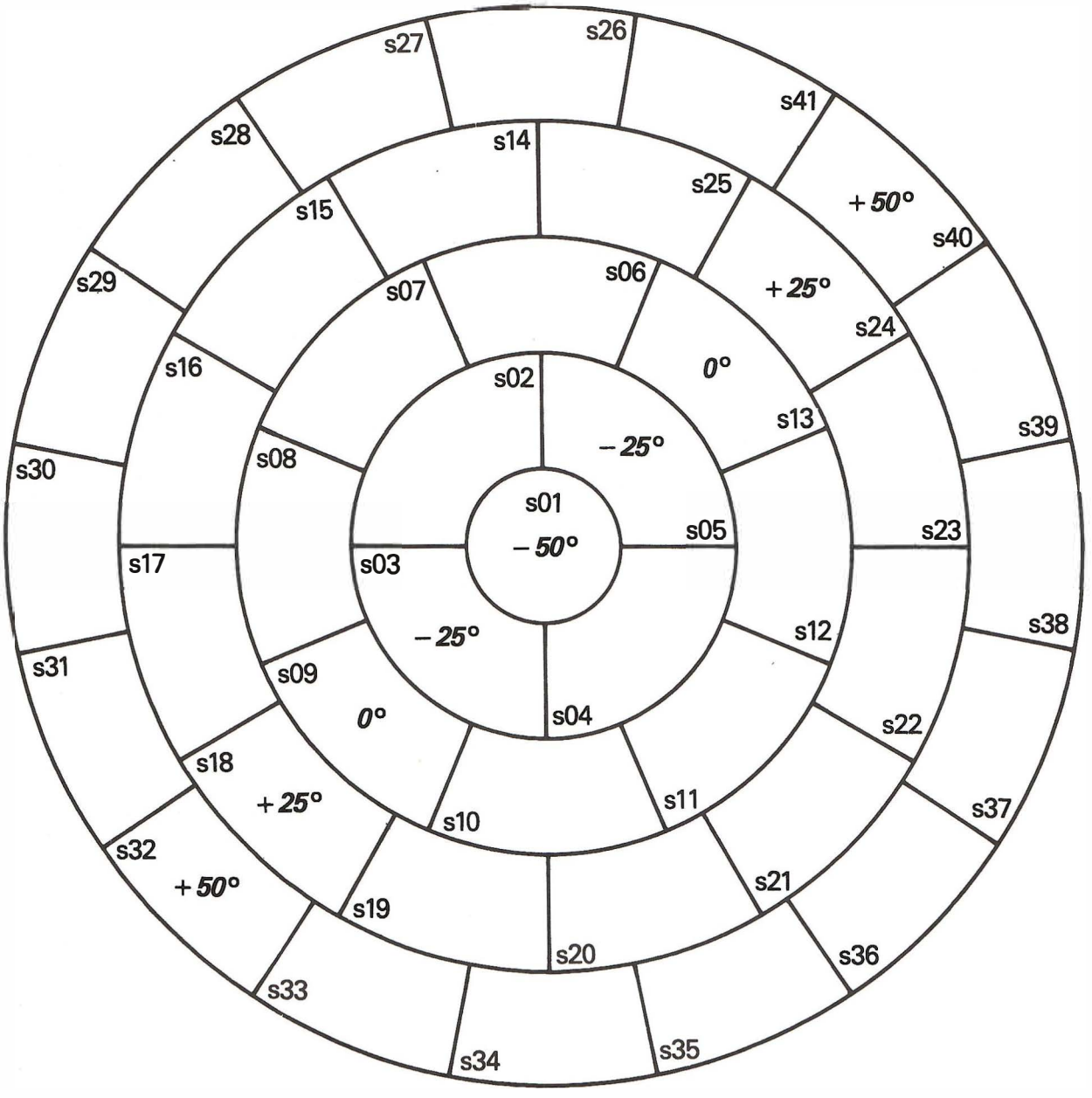
NAME _____ TYPE _____ MOONS (nr.) _____

DISTANCE FROM STAR _____ ATMOSPHERE _____ MEAN TEMP _____

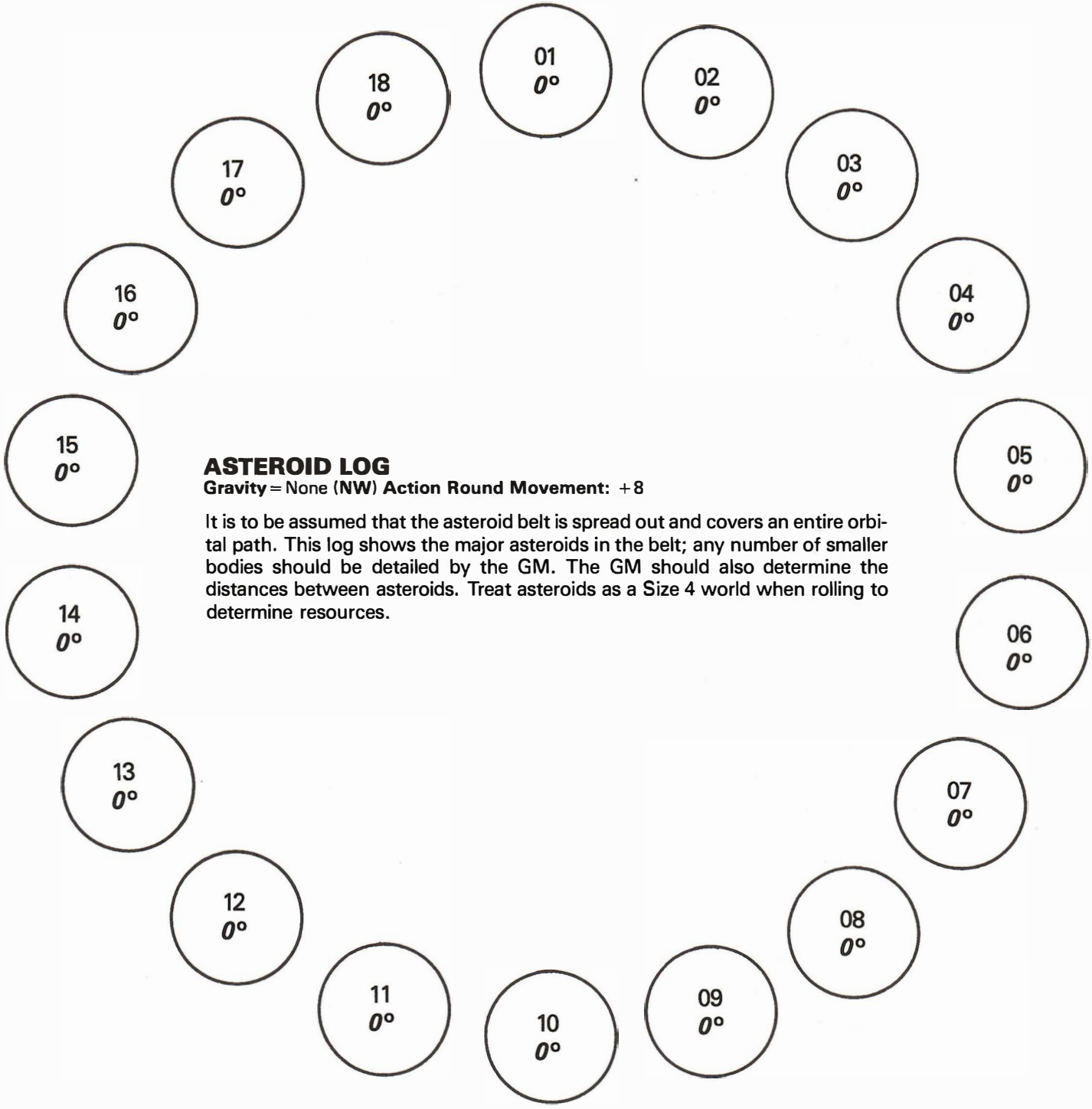
HYDROGRAPH _____ DAY LENGTH _____ HUMAN POPULATION _____

SETTLEMENT STATUS _____ LAW LEVEL _____ CIV LEVEL _____

SPACEPORT CLASS _____ RESOURCES _____


s01
– 50°
s02
– 25°
s03
– 25°
s04
s05
0°
s06
+ 25°
s07
s08
0°
s09
+ 25°
s10
s11
s12
0°
s13
+ 25°
s14
s15
s16
s17
s18
+ 50°
s19
s20
s21
s22
s23
+ 50°
s24
s25
s26
s27
s28
s29
s30
s31
s32
s33
s34
s35
s36
s37
s38
s39
s40
s41

REMARKS _____



ASTEROID LOG

Gravity = None **(NW) Action Round Movement:** +8

It is to be assumed that the asteroid belt is spread out and covers an entire orbital path. This log shows the major asteroids in the belt; any number of smaller bodies should be detailed by the GM. The GM should also determine the distances between asteroids. Treat asteroids as a Size 4 world when rolling to determine resources.

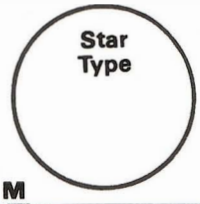
NAME _____ TYPE _____ MOONS (nr.) _____

DISTANCE FROM STAR _____ ATMOSPHERE *None* MEAN TEMP _____

HYDROGRAPH *0%* DAY LENGTH _____ HUMAN POPULATION _____

SETTLEMENT STATUS _____ LAW LEVEL _____ CIV LEVEL _____

SPACEPORT CLASS _____ RESOURCES _____



STAR SYSTEM LOG

System Name _____ **Coordinates** _____ **Distance from Sol** _____

STAR TYPE
A F G K M

HOSTILE
NORMAL (+2)
NORMAL (+2)
BIOSPHERE (−2)
NORMAL (+2)
HOSTILE

1 ORBIT 0.5AU
Name _____
Size (−1) _____ **Type** _____
Resources _____ **Moons (nr.)** _____

2 ORBIT 1.0AU
Name _____
Size (−1) _____ **Type** _____
Resources _____ **Moons (nr.)** _____

3 ORBIT 1.5AU
Name _____
Size (0) _____ **Type** _____
Resources _____ **Moons (nr.)** _____

4 ORBIT 2.0AU
Name _____
Size (0) _____ **Type** _____
Resources _____ **Moons (nr.)** _____

5 ORBIT 2.5AU
Name _____
Size (0) _____ **Type** _____
Resources _____ **Moons (nr.)** _____

6 ORBIT 3.5AU
Name _____
Size (0) _____ **Type** _____
Resources _____ **Moons (nr.)** _____

7 ORBIT 5.0AU
Name _____
Size (0) _____ **Type** _____
Resources _____ **Moons (nr.)** _____

8 ORBIT 7.0AU
Name _____
Size (+1) _____ **Type** _____
Resources _____ **Moons (nr.)** _____

9 ORBIT 10.0AU
Name _____
Size (+1) _____ **Type** _____
Resources _____ **Moons (nr.)** _____

10 ORBIT 15.0AU
Name _____
Size (+1) _____ **Type** _____
Resources _____ **Moons (nr.)** _____

11 ORBIT 25.0AU
Name _____
Size (+1) _____ **Type** _____
Resources _____ **Moons (nr.)** _____

12 ORBIT 40.0AU
Name _____
Size (+1) _____ **Type** _____
Resources _____ **Moons (nr.)** _____

SYSTEM NOTES

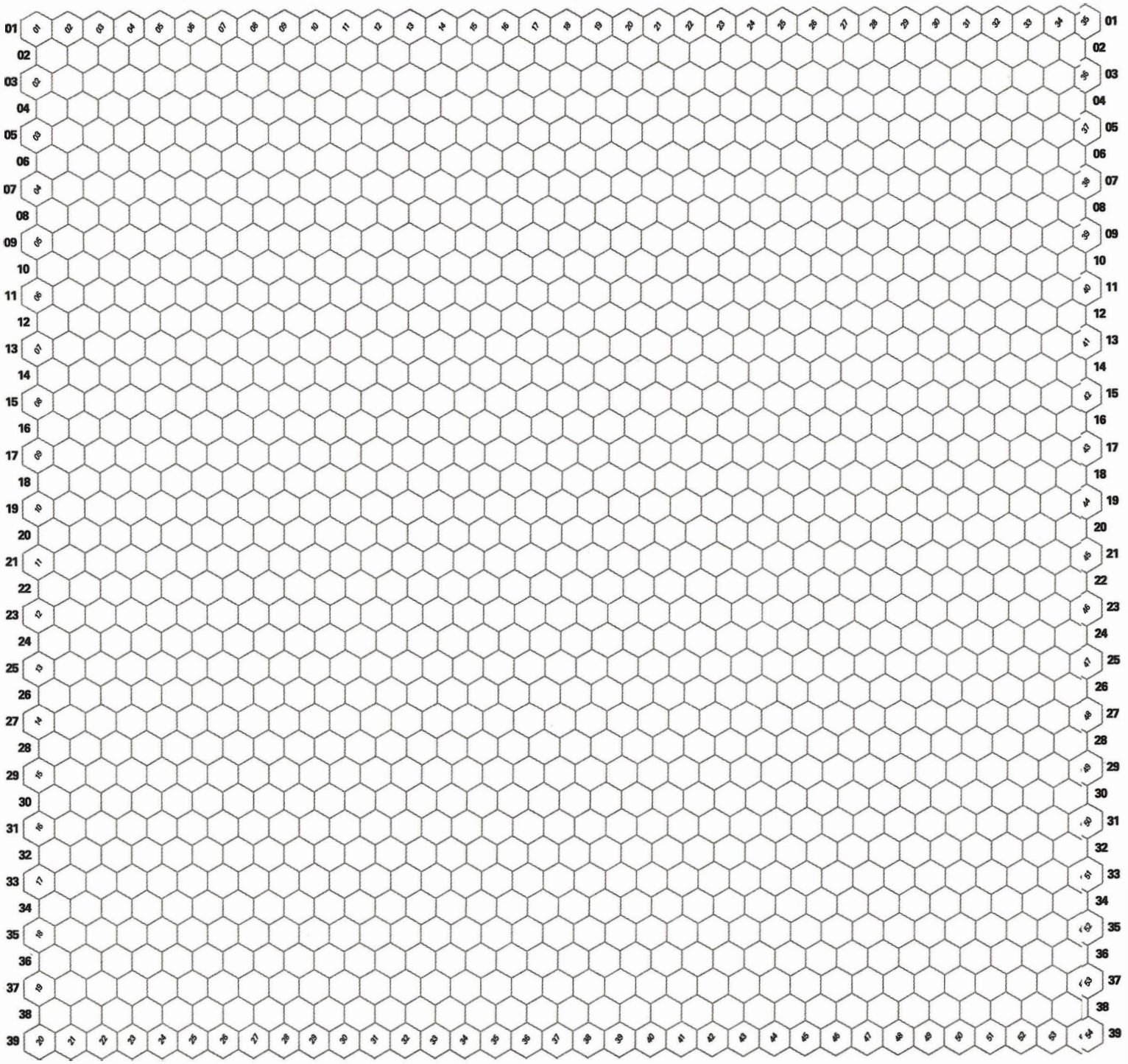
Interstellar Routes

GREEN _____
_____
AMBER _____
_____
RED _____
_____

Interplanetary Routes

_____ TO _____ ☐ G ☐ R ☐ A
_____ TO _____ ☐ G ☐ R ☐ A
_____ TO _____ ☐ G ☐ R ☐ A
_____ TO _____ ☐ G ☐ R ☐ A
_____ TO _____ ☐ G ☐ R ☐ A
_____ TO _____ ☐ G ☐ R ☐ A

Capital World _____
Federal Fleet _____
Starports _____
_____
_____
_____
_____



ENVIRON HEX MAP

1 hex = 100 km

NOTE: To locate a particular hex on the map (e.g., hex **39**-*095*), read *straight* across the hex row (indicated with a **bold** numeral) and read *diagonally* down the hex column (indicated with an *italic* numeral) to the intersection of row and column.

[24.5] ENVIRON TYPE CHART

LAND/LIQUID DISTRIBUTION►	WATER WITH MINOR OR MAJOR ISLANDS				WATER/LAND *OR* LAND WITH MAJOR WATER BODIES				LAND WITH MINOR WATER BODIES				LAND ONLY (WATER ELSEWHERE ON WORLD)				LAND ONLY (NO WATER ANYWHERE ON WORLD)		
TEMPERATURE►	0 to 25	50	75	100 to 125	0 to 25	50	75	100 to 125	0 to 25	50	75	100 to 125	0 to 25	50	75	100 to 125	0 or less	25 50 75	100 or more
ENVIRON TYPE																			
See Note	1	1	2	3	1	1	1	2	1	2	2	3	2	3	3	4	3	5	7
Volcano/Hills	3	4	6	9	2	3	3	4	3	5	6	7	4	7	8	10	8	12	17
Volcano/Mountains	4	6	9	14	3	4	5	6	5	7	9	10	6	9	11	14	13	19	26
Volcano/Peaks	5	8	11	17	4	5	–	7	6	8	10	12	7	10	13	16	14	21	28
Crater/Flat	–	–	–	–	–	–	–	–	7	9	11	13	9	12	15	18	24	31	37
Crater/Hills	–	–	–	–	–	–	–	–	8	10	12	14	11	14	17	20	39	46	52
Crater/Mountains	–	–	–	–	–	–	–	–	9	11	13	15	13	16	19	22	51	58	64
Crater/Peaks	–	–	–	–	–	–	–	–	10	12	14	16	14	17	20	23	53	60	66
Barren/Flat	11	10	12	26	9	6	6	16	20	19	22	34	29	27	34	42	62	69	74
Barren/Hills	23	15	15	42	18	8	7	32	32	27	31	54	49	40	52	66	75	82	86
Barren/Mountains	33	20	17	55	25	10	8	45	40	33	37	66	59	48	61	79	84	91	94
Barren/Peaks	36	22	18	59	27	11	–	47	44	36	40	71	63	52	65	84	86	93	96
Light Veg/Flat	41	28	22	67	36	18	14	57	48	43	47	77	67	61	72	87	87	94	97
Light Veg/Hills	46	33	27	75	46	25	20	68	54	52	55	84	72	71	80	91	88	95	98
Light Veg/Mountains	56	40	32	83	53	31	25	78	58	58	61	88	76	78	86	93	89	96	99
Light Veg/Peaks	59	42	34	85	55	33	26	80	60	61	63	90	77	81	88	94	90	97	00
Woods/Flat	62	46	38	90	60	39	32	87	64	66	68	93	80	85	92	95	–	–	–
Woods/Hills	65	51	42	95	66	46	38	94	68	73	74	97	83	91	96	97	–	–	–
Woods/Mountains	71	58	49	99	70	52	44	99	71	77	78	99	85	97	99	99	–	–	–
Woods/Peaks	73	60	52	00	71	54	46	00	72	79	79	00	86	99	00	00	–	–	–
Forest/Flat	75	64	55	–	73	60	52	–	74	82	83	–	–	–	–	–	–	–	–
Forest/Hills	77	70	59	–	76	69	58	–	76	86	87	–	–	–	–	–	–	–	–
Forest/Mountains	80	72	67	–	78	75	64	–	78	88	89	–	–	–	–	–	–	–	–
Forest/Peaks	81	79	69	–	79	77	66	–	79	89	90	–	–	–	–	–	–	–	–
Jungle/Flat	–	82	76	–	–	81	74	–	–	90	92	–	–	–	–	–	–	–	–
Jungle/Hills	–	87	88	–	–	86	83	–	–	91	94	–	–	–	–	–	–	–	–
Jungle/Mountains	–	89	95	–	–	88	90	–	–	92	95	–	–	–	–	–	–	–	–
Marsh/Flat	–	95	98	–	–	95	96	–	–	96	98	–	–	–	–	–	–	–	–
Marsh/Hills	–	99	00	–	–	99	00	–	–	99	00	–	–	–	–	–	–	–	–
Ice/Flat	90	–	–	–	89	–	–	–	88	–	–	–	92	–	–	–	94	98	–
Ice/Hills	00	00	–	–	00	00	–	–	00	00	–	–	00	00	–	–	00	00	–

How to Read the Result: Roll percentile dice and locate the column corresponding to the Land/Liquid/Temperature combination of the environ. Read down the column until you locate the result which most nearly equals the percentile roll without being less than the roll. For example, rolling a **34** in the first column would yield and environ type of Barren/Peaks. See 24.5 for detailed explanation of use.

Note: All environs of same water and temperature type which have not yet been assigned an environ type will be the type determined by the next percentile roll. **(-):** Environ type impossible; proceed down the column. **Peaks:** If the world size is **7** or greater, treat as Hill. **Mountains:** If the world size is **9**, treat as Flat. If the Land/Liquid distribution is water only, this table is not used. However, if the GM wishes to check for ice in a water-only environ, roll using the water with minor islands column and ignore all non-ice results.

[23.2] BINARY/TRINARY STAR SYSTEM SUMMARY

STAR: RESTRICTION	
Alpha Centauri A: −2, −1, −4	1-2
61 Cygni A:	1-6
61 Cygni B: +6, −6, +7	1-5
Jim: +6, −18, +2	1-10
WX Ursae Majoris A: −13, +4, +13	1-8
Eta Cassiopeiae A: +10, +2, +15	1-7
BD + 53° 1320:	1-7
BD + 53° 1321: −9, +8, +16	1-7

STAR: RESTRICTION	
CD − 8° A: −6, −20, −3	2-12
Rho Eridani A:	1-2
Rho Eridani B: +11, +5, −18	1-2
41 Arae A: −3, −18, −19	1-2
Gamma Leporis A:	1-11
Gamma Leporis B: +2, +25, −10	1-8
CD − 36° 13A: +8, −13, −12	1-2

Roll only for planets in indicated positions for these stars.

[25.2] WORLD DEVELOPMENT TABLE

TWO DICE	SETTLEMENT STATUS	HUMAN POP.	LAW LEVEL	SPACE PORT	CIV LEVEL RANGE
0	Uncharted	0	0	0	None
1	Unexplored	0	0	0	None
2	Unexplored	0	0	0	None
3	Unexplored	0	0	0	None
4	Explored and Abandoned	10	0	0	1-2
5	Explored and Abandoned	100	0	0	1-2
6	Abandoned Pioneer Colony	200	0	0	1-3
7	Active Exploration	100	0	0	1-4
8	Active Exploration	1,000	1	0	2-4
9	Active Exploration	2,000	1	½	2-4
10	Pioneer Colony	1,000	1	0	1-4
11	Pioneer Colony	10,000	1	½	2-5
12	Pioneer Colony	20,000	2	½	2-5
13	Subsidized Scientific Colony	10,000	1	½	4-6
14	Subsidized Scientific Colony	100,000	2	1	4-6
15	Subsidized Scientific Colony	200,000	2	1	5-7
16	Subsidized Working Colony	100,000	2	1	3-5
17	Subsidized Working Colony	1 million	2	2	4-6
18	Subsidized Working Colony	2 million	3	2	4-6
19	Self-Sufficient Colony	1 million	2	2	4-7
20	Self-Sufficient Colony	10 million	3	2	5-7
21	Self-Sufficient Colony	20 million	3	3	5-7
22	Full-Tech Colony	10 million	3	2	5-8
23	Full-Tech Colony	100 million	3	3	6-8
24	Full-Tech Colony	200 million	4	3	6-8
25	Minor State	100 million	4	3	6-8
26	Minor State	1 billion	4	3	6-8
27	Minor State	2 billion	4	4	7-8
28	Major State	1 billion	4	4	7-8
29	Major State	3 billion	4	4	8

See 25.1 for explanation of use.

MODIFIERS:

WORLD ATMOSPHERE		WORLD TEMPERATURE		WORLD HYDROGRAPH	
None	0	−75, −50	0	0%	−1
Thin, Cor.	2	−25	1	20%	2
Normal, Cor.	3	0	3	40%	4
Thin	4	25	4	60-80%	5
Normal	5	50, 75	5	100%	2
Poison	1	100	4		
Corrosive	−1	125	3		
		150	1		
		175, 200	−1		

Procedure: Take the appropriate number from each of the columns and add them together. If the world is resource rich, double this total (**Exception**: If the total is negative, and the world is resource rich, divide the total by two, rounding toward zero.) Subtract one half (rounded down) of the world's star's distance from Sol from this new total. The result is the Development Value. Roll two dice and add the Development Value to the roll, and apply this result to the Table.

[25.4] ENFORCER ENCOUNTER TABLE

LAW LEVEL	FREQUENCY
0	No authorities
1	1 out of 8 encounters
2	1 out of 5 encounters
3	1 out of 4 encounters
4	1 out of 3 encounters
5	1 out of 2 encounters

[24.4A] WORLD HYDROGRAPH TABLE

Results represent percentage of the world's surface covered with water. This table is not used for worlds which possess no atmosphere, or possess average temperatures below **0** or above **125**. Such worlds automatically have no water. See 24.4 for detailed explanation of use.

	WORLD TEMPERATURE									
	50,75				0,25,100,125					
	WORLD SIZE				WORLD SIZE					
ONE DIE	3	4	5	6-9	2	3	4	5	6-9
1	0	0	20	20	0	0	0	0	0
2	0	20	20	40	0	0	0	0	20
3	0	20	40	40	0	0	0	20	20
4	20	20	40	40	0	0	0	20	20
5	20	40	60	60	0	0	20	20	40
6	20	40	60	60	0	20	20	40	40
7	20	40	60	80	0	20	20	40	60
8	40	60	80	80	20	20	40	40	60
9	40	60	80	100	20	40	40	60	80
10	40	80	100	100	20	40	60	60	80

[24.4B] LAND AND WATER DISTRIBUTION CHART

WORLD SIZE	HYDROGRAPH PERCENTAGE	WATER	WATER/MINOR ISLANDS	WATER/MAJOR ISLANDS	WATER/LAND	LAND/MAJOR WATER	LAND/MINOR WATER	LAND
2	20	0	0	0	0	2	2	2
3	20	0	0	0	1	3	2	4
3	40	0	0	3	2	2	2	1
4	20	0	0	0	1	6	4	7
4	40	0	0	5	4	4	4	1
4	60	1	4	6	4	2	1	0
4	80	7	6	4	1	0	0	0
5	20	0	0	0	3	8	5	10
5	40	0	1	6	6	5	5	3
5	60	3	5	7	5	3	3	0
5	80	10	8	5	3	0	0	0
5	100	23	3	0	0	0	0	0
6	20	0	0	0	4	11	8	15
6	40	0	1	8	9	8	8	4
6	60	4	8	10	8	4	4	0
6	80	15	11	8	4	0	0	0
6	100	34	4	0	0	0	0	0
7	20	0	0	1	4	14	11	20
7	40	0	1	13	11	10	10	5
7	60	5	11	14	10	5	4	1
7	60	5	11	14	10	5	4	1
7	80	20	16	9	4	1	0	0
7	100	45	5	0	0	0	0	0
8	20	0	0	1	6	19	14	26
8	40	0	1	18	14	13	13	7
8	60	7	14	18	13	7	6	1
8	80	26	21	12	6	1	0	0
8	100	60	5	1	0	0	0	0
9	20	0	0	1	7	24	17	33
9	40	0	1	23	17	17	16	8
9	60	8	17	24	17	8	7	1
9	80	33	26	15	7	1	0	0
9	100	75	6	1	0	0	0	0

See 24.4 for explanation of use.

[27.2] ENCOUNTER TABLE

ENCOUNTER		ENVIRON HUMAN POPULATION: DEEP SPACE	PLANET SPACE	SPACEPORT	URBAN	SUBURBAN/TOWN	10 MILLION OR MORE	100 THOUSAND TO 10 MILLION	100 THOUSAND OR FEWER
Spaceship[1]	C	1–3	1–12	–	–	–	–	–	–
Spaceship	R	4–5	13–18	–	–	–	–	–	–
Spaceship	U	6	19–20	–	–	–	–	–	–
Federation[2]		–	–	1–15	1–5	1	–	–	–
NPC	C[3]	–	–	16–47	6–41	2–31	1–21	1–12	1–3
NPC	R	–	–	48–64	42–59	32–46	22–32	13–18	4–5
NPC	U	–	–	65–70	60–65	47–51	33–35	19–20	6
Creature	C[4] 1	–	–	–	–	–	36–37	21–24	7–12
	2	–	–	–	–	52	38–39	25–28	13–19
	3	–	–	–	–	–	40–41	29–32	20–25
	4	–	–	–	–	53	42–43	33–36	26–32
	5	–	–	–	–	–	44–45	37–40	33–38
	6	–	–	–	–	54	46–47	41–44	39–45
Creature	R 1	–	–	–	–	–	48	45–46	46–48
	2	–	–	–	–	55	49	47–48	49–41
	3	–	–	–	–	–	50	49–50	52–54
	4	–	–	–	–	–	51	51–52	55–58
	5	–	–	–	–	56	52	53–54	59–61
	6	–	–	–	–	–	53	55–56	62–64
Creature	U 2	–	–	–	–	–	54	57	65–66
	4	–	–	–	–	57	–	58–59	67–69
	6	–	–	–	–	–	55	60	70–71
Accident[5]	C	7–9	21–26	71–73	66–71	58–63	56–61	61–66	72–77
Accident	R	10–11	27–29	74–75	72–74	64–66	62–64	67–69	78–80
Accident	U	12	30	76	75	67	65	70	81
No Encounter		13+	31+	77+	76+	68+	66+	71+	82+

C: Common. **R:** Rare. **U:** Unique. Note that creatures are sub-divided into Creature Value categories which affects their likelihood of occurrence (see 27.1). **1.** Treat as no encounter if the characters are not involved in controlling or maintaining the spaceship, or if within the planet space of a world that has no human population. **2.** Treat as no encounter if the Law Level is 0 or 1. **3.** Treat as no encounter if the party is in an environ with no known human population, or if the party is travelling faster than 20 km per hour and have declared that they are not interested in passers-by. **4.** Treat as no encounter if the party has declared no interest in the wildlife of the area, or if there is no known life on the world. **5.** Treat as no encounter if the characters are travelling in a vehicle which they do not control.

[27.7] TERRAIN EFFECTS CHART

ENVIRON TYPE	TERRAIN VALUE	ACTION ROUND MOVEMENT MODIFIER	CREATURE VALUE	CREATURE LOCATIONS: COMMON	RARE	UNIQUE
Vol/Hills	2	−4	6	9,13,15,17,18	21,27,29,31	38,39,40
Vol/Mount	3	−6	6	9,13,15,17,18	21,27,29,31	38,39,40
Vol/Peaks	4	−8	6	9,13,15,17,18	24,27,29,30	38,39,40
Crater/Flat	1.5	−2	6	9,11,13,14,17,18	23,27,29,30	38,39,40
Crater/Hills	2	−4	6	9,11,13,14,17,18	21,27,29,31	38,39,40
Crater/Mount	3	−6	6	9,11,13,14,17,18	21,27,29,31	38,39,40
Crater/Peaks	4	−8	6	9,11,13,14,17,18	27,29,30,31	38,39,40
Barren/Flat	1	0	5	9,11,14,15,17,18	21,23,25,27	37,39,40
Barren/Hills	1.5	−2	5	9,11,14,15,17,18	21,23,25,27	37,39,40
Barren/Mount	2	−4	5	9,11,14,15,17,18	21,25,27,29	37,39,40
Barren/Peaks	3	−6	5	9,11,14,15,17,18	24,27,29,30	37,39,40
Lt Veg/Flat	1	0	4	1,4,5,6,7,13	23,24,29,30	32,34,37
Lt Veg/Hills	1.5	−2	4	1,4,5,6,13,16	23,24,29,30	32,34,37
Lt Veg/Mount	2	−4	4	1,4,5,6,7,13	24,29,30,31	32,34,37
Lt Veg/Peaks	3	−6	4	1,4,5,6,9,11	24,29,30,31	32,34,37
Woods/Flat	1.5	−2	3	1,2,4,7,8,16	19,20,24,26	32,33,36
Woods/Hills	2	−4	3	2,4,5,7,8,16	19,20,24,26	32,33,36
Woods/Mount	3	−6	3	1,2,4,5,6,7	19,20,24,26	32,33,36
Woods/Peaks	4	−8	3	1,2,4,5,6,8	19,20,24,26	32,33,36
Forest/Flat	2	−4	2	1,2,4,5,7,8	19,20,24,29	34,35,37
Forest/Hills	3	−6	2	1,2,4,5,8,17	19,20,24,29	34,35,37
Forest/Mount	4	−8	2	2,4,5,7,8,18	19,20,24,29	34,35,37
Forest/Peaks	5	−10	2	1,2,4,5,7,8	19,20,24,29	34,35,37
Jungle/Flat	3	−6	1	3,4,5,7,17,18	28,29,30,31	37,38,39
Jungle/Hills	4	−8	1	3,4,5,7,17,18	28,29,30,31	37,38,39
Jungle/Mount	5	−10	1	3,4,5,7,17,18	28,29,30,31	37,38,39
Marsh/Flat	1.5	−4	2	2,3,4,5,7,17	19,24,29,30	38,39,40
Marsh/Hills	2	−6	2	2,3,4,5,7,17	19,24,29,30	37,38,40
Ice/Flat	1	−4	5	13,15,16,17,18	24,29,30,31	37,38,40
Ice/Hills	3	−6	5	13,15,16,17,18	24,29,30,31	37,38,40
Water	A	−10	2	10,12,18	22,24,31	32,33

Terrain Value: Affects daily and hourly movement rates of characters and vehicles (see 26.4), Action Round movement rates of vehicles (see 21.0), range of vision (28.3), and Hit Chance of weapon fire (29.5). **Action Round Movement Modifier:** Affects movement rate of characters in an Action Round (see 29.2). **Creature Value:** Affects likelihood of a creature encounter (see 27.1). **Creature Location:** Identifies creatures (by identity number) which may be encountered (see 27.6). **A:** Terrain on water surface ranges from **1** to **3**, depending on choppiness of surface. Terrain Value when submerged ranges from **1.5** to **5**, depending on depth and opacity of liquid. A Terrain Value of **1** is considered **0** when calculating Hit Chance of weapon fire.

[25.8] WORLD RESOURCE TABLE

PERCENTILE DICE	PRICE	RESOURCE	CIV LEVEL OF WORLD 1	2	3	4	5	6	7	8	NR. OF ENVIRONS EARTHLIKE	TOLERABLE	HOSTILE
1-8	0.5/T	Iron	A	R	M,JJ	–	–	–	–	–	–	–	7
9-14	2.0/T	Aluminum	–	–	A,R	L,G	–	–	–	–	–	–	6
15-19	40.0/T	Radioactives	–	–	–	D	A,F	–	–	–	–	–	5
20-23	3.5/T	Copper	D,R	–	A	–	–	X	–	KK	–	–	4
24-26	10.0/T	Chromium	–	–	D	S,R	A	NN	–	–	–	–	3
27-29	0.5/K	Silver	D	–	A	P	–	–	–	–	–	3	3
30	1.0/G	Gold	D	–	–	–	–	AA	–	–	–	1	1
31	1.0/G	Platinum	–	D	A	R	C	–	–	–	–	1	1
32-33	10.0/T	Titanium	–	–	–	D	Z,J	A,Y	–	–	–	2	2
34-35	50.0/T	Cesium	–	–	–	D	F,H	A	–	–	–	1	1
36-37	to 21/T	Other Metals[1]	–	–	D	–	–	A,N	–	KK	–	2	2
38-40	15.0/T	Ammonia	A	–	–	K	LL	–	–	–	–	1	1
41	2.0/G	Magnetic Monopoles	–	–	–	–	–	E	D,V	A	–	S	S
42	1.0/G	Crystals	–	D	–	–	–	A,MM	–	–	–	S	S
43-45	1.0/T	Phosphorus	–	–	–	D,R	A,W	–	–	–	–	3	3
46-47	2.0/T	Germanium	–	–	–	D,R	–	A,EE	–	–	–	2	2
48	2.0/T	Silicon	–	–	D	R,CC	A	–	–	–	–	2	2
49-50	to 4/T	Other Non-Metals[2]	–	–	–	D,R	BB	–	A,V	–	–	3	3
51-57	0.5/T	Iron	A	R	M,JJ	–	–	–	–	–	4	4	7
58-63	2.0/T	Aluminum	–	–	A,R	L,G	–	–	–	–	3	3	6
64-68	40.0/T	Radioactives	–	–	–	D	A,F	–	–	–	2	2	5
69-72	3.5/T	Copper	D,R	–	A	–	–	X	–	KK	2	2	4
73-75	10.0/T	Chromium	–	–	D	S,R	A	NN	–	–	1	2	3
76-78	0.5/K	Silver	D	–	A	P	–	H,MM	–	–	1	3	3
79	1.0/G	Gold	D	–	–	–	–	AA	–	–	S	1	1
80	1.0/G	Platinum	–	D	A	R	C	–	–	–	S	1	1
81-82	10.0/T	Titanium	–	–	–	D	Z,J	A,Y	–	–	1	2	2
83	50.0/T	Cesium	–	–	–	D	F,H	A	–	–	S	1	1
84-85	to 21/T	Other Metals[1]	–	–	D	–	–	A,N	–	KK	1	2	2
86-88	1.0/T	Phosphorus	–	–	–	D,R	A,W	–	–	–	1	3	3
89-90	2.0/T	Germanium	–	–	–	D,R	–	A,EE	–	–	1	2	2
91-93	2.0/T	Silicon	–	–	D	R,CC	A	–	–	–	1	2	2
94-98	to 4/T	Other Non-Metals[2]	–	–	–	D,R	BB	H,MM	A,V	–	2	3	3
99	1.0/G	Exotic Spices	–	A	D	LL	–	–	–	–	S	S	S
100-104	5.0/T	Organic Chemicals CARBON	–	–	D,FF	A,U	–	–	–	–	3	3	S
105-109	1.0/T	Organic Chemicals NITROGEN	–	D	A,HH	–	–	–	–	–	3	3	–
110-113	3.0/T	Light Fiber Plants	D,T	A	–	–	–	–	–	–	2	2	–
114-119	0.8/T	Woodlike Plants	D,Q	A	FF	–	–	–	–	–	3	3	–
120-122	VARIABLE	Arable Land	D	A,GG	–	B	–	–	–	–	7	2	–
123-124	to 5/T	Edible Plants	–	D,GG	A,B	–	–	–	–	–	5	1	–
125	to 1/T	Edible Game	D,DD	–	A	–	–	–	–	–	3	S	–
126-137	VARIABLE	Arable Land	D	A,GG	–	B	–	–	–	–	7	–	–
138-146	to 5/T	Edible Plants	–	D,GG	A,B	–	–	–	–	–	5	–	–
147-150	to 1/T	Edible Game	D,DD	–	A	–	–	–	–	–	3	–	–

Modifiers: Add **25** if world is Tolerable; add **50** if world is Earth-like.
Roll a number of times *equal to* the World size if resource poor; roll a number of times *equal to* the World size **+8** if resource rich.

Price: Given in Trans per gram, kilo, or ton. **To #/T:** Price fluctuates from that figure, down 50%. **Variable:** Price varies extremely, depending on availability on the world.

Notes: 1. These include such metals as adamantine, beryllium, erbium, gadolinium, lead, manganese, mercury, nickel, potassium, rubidium, strontium, tin, and zinc. **2.** These include such non-metals as argon, barium, chlorine, cobalt, fluorine, helium, iodine, krypton, sulfur, and xenon. **S:** Site.

See 25.7 for detailed explanation of use.

WORLD RESOURCE TABLE
Explanation of Results

After determining the resources for a world, the Civ Level of the world is used to determine the development of those resources. Any lettered listing under that world's Civ Level or a lesser Civ Level applies to the resource. Results which indicate a product is available do not imply all products of that generic type are readily available; the Civ Level of the item in question must still be less than or equal to the Civ Level of the world. For example, lettered result **E** indicates psionic equipment is available; however, if the Civ Level of the world was less than **8**, an interstellar commlink would not be available. For some lettered results, the item is reaily available only if certain other resources are available. These resources are listed with the item. Also listed with the item is the resource from which it came.

A. The resource is automatically discovered wherever it occurs on the world.

B. Vegetables and fruit. *Resource:* Edible plants, arable land.

C. All chemistry equipment, if iron is also available. *Resource:* Platinum.

D. The resource has been discovered in some (approximately half) of the environs in which it occured; the GM should decide which environs.

E. Psionic equipment (including jump pods, augmented jump pods, hunter pods, explorer pods, and psionic rigs), if iron is also available. *Resource:* Magnetic monopoles.

F. Fuel for sub-light drives and fission power plants, if iron is also available. *Resource:* Radioactives.

G. All non-jet aircraft (including gliders, propeller planes, and helicopters), if iron is also available. *Resource:* Aluminum.

H. Holographic equipment, if iron is also available. *Resource:* Other non-metals, cesium.

J. Jet air vehicles, if iron is also available. *Resource:* Titanium.

K. Fertilizers. *Resource:* Ammonia.

L. Ground and marine vehicles, if iron is also available. *Resource:* Aluminum.

M. Machine tools and tech kits. *Resource:* Iron.

N. Unarmored spaceship hulls and pods, if iron is also available. *Resource:* Other metals.

P. Recording equipment (with the exception of holographic equipment, see **H**), if iron is also available. *Resource:* Silver.

Q. Wood products and structures. *Resource:* Woodlike plants.

R. Resource is refined wherever it has been discovered on the world.

S. All impact armor, if iron is also available. *Resource:* Chromium.

T. Textiles. *Resource:* Light fiber plants.

U. Vision equipment and other plastics, if iron is also available. *Resource:* Organic chemicals (carbon).

V. Robot hardware and software, if iron is also available. *Resource:* Magnetic monopoles, other non-metals.

W. Artillery weapons and explosives, if iron is also available. *Resource:* Phosphorous.

X. Robot chassis, if iron is also available. *Resource:* Copper.

Y. Armored spaceships, if iron is available. *Resource:* Titanium.

Z. Armored ground vehicles, if iron is also available. *Resource:* Titanium.

AA. All body armor, if iron is also available. *Resource:* Gold.

BB. Computer parts and software (including robot software), if iron is available. *Resource:* Other non-metals.

CC. Communications equipment, if iron is also available. *Resource:* Silicon.

DD. Meat. *Resource:* Edible game.

EE. All scientific equipment (except chemistry equipment, see **C**), if iron is also available. *Resource: Germanium.*

FF. Fossil fuels. *Resource:* Woodlike plants, organic chemicals (carbon).

GG. Grain. *Resource:* Arable land, edible plants.

HH. Explosives, ammunition, and explosive grenades, if iron is also available. *Resource:* Organic chemicals (nitrogen).

JJ. Projectile weapons (handguns and longarms). *Resource:* Iron.

KK. Force fields of all types, if iron is also available. *Resource:* Copper, other metals.

LL. Drugs and poisons. *Resource:* Exotic spices, ammonia.

MM. Beam weapons, if iron is also available. *Resource:* Other non-metals, crystals.

NN. Expedition suits, if iron is also available. *Resource:* Chromium.

[28.5] CREATURE REACTION TABLE

ONE DIE PLUS CREATURE'S AGGRESSION	REACTION
2–8	Flee (J)
9–10	Leave Slowly*
11	Watch Warily*
12	Ignore
13	Watch Warily*
14, 15	Protect*
16–22	Attack (D)

Notes: * If the creature possesses an Intelligence Rating, its reaction is to communicate (instead of the listed result). **J.** If the party is unaware of the creature, immediately conduct Interaction J. **D.** If the party is unaware of the creature, immediately conduct Interaction D. This table is not used if the creature is unaware of the party. See 28.4 for explanation of use.

[28.6] CREATURE INTERACTION MATRIX

CHARACTER STRATEGY► / CREATURE REACTION	ATTACK	MANEUVER	WATCH WARILY	IGNORE/ UNAWARE	FLEE	COMMUNICATE
Attack	A	B	C	D	E	F
Protect	A	G	H	I	J	K
Watch Warily	L	M	N	N	J	P
Ignore/Unaware	Q	M	N	N	J	R
Leave Slowly	S	T	U	J	J	V
Flee	W	X	Y	J	J	Y
Communicate	Z	AA	BB	N	J	CC

See 28.4 for explanation of use.

A. Conduct Action Rounds until one side or the other is dead, captured, or escaped (thus concluding the encounter). **B.** Conduct an Action Round. The characters have the initiative but may not attack the creature in any manner. **C.** Conduct an Action Round, adding *five* to the creature's initiative die roll. **D.** Conduct an Action Round. The creature has the initiative. Skip Step 4 of the Action Round. **E.** Each character may move as far as would be allowed in one Action Round (see 29.2). Then, conduct an Action Round, adding *eight* to the creature's initiative die roll. **F.** Conduct an Action Round. The creature has the initiative. **G.** Each character may move as far as would be allowed in one Action Round (see 29.2). then conduct interaction H. **H.** If the creature is able to attack without moving, conduct an Action Round, adding *five* to the creature's initiative die roll. Otherwise, return to Encounter Step 5. **I.** If the creature is able to attack without moving, conduct interaction F. Otherwise, return to Encounter Step 5. **J.** The encounter is over (the creature, the characters, or both have left the area). **K.** The GM rolls one die and adds the creature's *Intelligence Rating* (if any) to the result. If the modified die result is *less than* the creature's *Aggression Rating*, conduct interaction F (the creature has mistaken the character's actions for an attack). Otherwise, after time passes without incident, return to Encounter Step 5. **L.** Conduct an Action Round, adding *five* to the party's initiative die roll. **M.** Each character may move as far as would be allowed in one Action Round (see 29.2). **N.** Time passes as neither side takes any action. **P.** The characters' communication efforts seem to have no effect. If the creature has no Intelligence Rating, or the following check is not successful, time passes without incident; return to Encounter Step 5. The GM rolls percentile dice. If the result is less than the creature's *Intelligence Rating* plus the highest *Empathy Rating* of those characters attempting communication, roll one die and refer to the Creature Reaction Table to see if the creature changes its reaction (the party retains the communicate strategy). If the creature possesses psionic powers, the *square* of one character's *Psionic Communication Skill Level* may be used *instead of an Empathy Rating.* **Q.** Conduct an Action Round. The party has the initiative. Skip Step 4 of the Action Round. **R.** The creature shows no interest as time passes; return to Encounter Step **5**. *Exception:* If the characters are attempting to communicate with a creature that is unaware of them, and the GM feels that the creature has been made aware by the character's actions, he may roll one die and refer to the Creature Reaction Table to determine the creature's reaction (the party retains the communicate strategy). **S.** Move the creature two hexes away from the characters. Then conduct an Action Round, giving the characters the initiative. **T.** Each character may move as far as would be allowed in one Action Round (see 29.2). At some point during the character's movement, move the creature two hexes away from them. **U.** Move the creature two hexes away from the party. **V.** The party's communication efforts have no effect. If the creature has no Intelligence Rating, or if the following check is not successful, it wanders away and the encounter is over. The GM rolls percentile dice. If the result is *less* than the creature's *Intelligence Rating* plus the highest *Empathy Rating* of those characters attempting communication, roll one die and refer to the Creature Reaction Table again to see if the creature changes its reaction (the party retains the communicate strategy). If the creature possesses psionic powers, the *square* of one character's *Psionic Communication Skill Level* may be used instead of an Empathy Rating. **W.** Move the creature away from the characters a number of hexes equal to its Agility Rating. Then conduct an Action Round, giving the characters the initiative. **X.** Move the creature away from the characters a number of hexes equal to its Agility Rating. Then each character may move as far as would be allowed in one Action Round (see 29.2). Finally, move the creature again (as above). **Y.** Move the creature away from the characters a number of hexes equal to its Agility Rating. **Z.** Conduct Interaction Q. Before returning to Encounter Step 5, roll percentile dice. If the result is *equal* to or less than the highest *Intelligence* or *Empathy Rating* among the characters, inform them that the creature has been attempting to communicate. If the creature possesses psionic powers, the *square* of one character's *Mental Power Rating* may be used instead of an Intelligence or Empathy Rating. **AA.** Each character may move as far as would be allowed in one Action Round (see 29.2). Then check to see if the characters become aware of the creature's communication attempt in accordance with Interaction Z, before returning to Encounter Step 5. **BB.** Time passes as neither side moves. Before returning to Encounter Step 5, roll *two* dice. If the result is *less* than the highest *Intelligence* or *Empathy Rating* among the characters, inform them that the creature is attempting to communicate. If the creature possesses psionic powers, the *square* of one character's *Mental Power Rating* may be used instead of an Intelligence or Empathy Rating. **CC.** The party and the creature are attempting to communicate. *Multiply* the creature's *Intelligence Rating* by the highest *Linguistics Skill Level* among the characters (minimum of one) *or*, if the creature has psionic powers, multiply its Intelligence Rating by the highest *Psionic Communication Skill Level* plus the highest *Mental Power Rating* possessed by *one* character. Roll percentile dice. If the result is equal to or less than the product calculated above, a successful means of communication has been established; the GM should play the creature as an NPC. If the dice result is greater than the product, return to Encounter Step 5. Only one dice roll is allowed per attempt, but as long as both sides choose to continue communicating, one dice roll may be made each time. However, the chance of success is *reduced* by *10* percentage points for each additional attempt (this is cumulative). The passage of about three hours should be noted for each attempt.

[28.8] NPC REACTION TABLE

ROLL DIFFERENCE	KEY WORD	NPC REACTION
−111 to −120	Attack	Viciously tries to kill the party.
−101 to −110	Attack	Tries to grievously hurt the party.
−91 to −100	Attack	Attacks party to stop them.
−81 to −90	Attack	Takes the offensive to warn the party.
−71 to −80	Attack	Tries to stop party without bloodshed.
−61 to −70	Attack	Aims weapons at the party.
−51 to −60	Attack	Draws weapons on party.
−41 to −50	Hesitant	Prepares to take offensive action.
−31 to −40	Cautious	Distrustful and will wait and see.
−21 to −30	Wary	Doubts party's word, but remains patient.
−11 to −20	Suspicious	Needs more knowledge to act.
−01 to −10	Suggestable	Will listen to party's story.
0	Friendly	Will aid the party if possible.
+01 to +10	Suggestable	Will hear the party out.
+11 to +20	Suspicious	Thinks party is here to make trouble.
+21 to +30	Wary	Nervous because party could cause harm.
+31 to +40	Cautious	Party intimidating and fear is growing.
+41 to +50	Hesitant	Party causing great fear.
+51 to +60	Flee	Backs away from party slowly.
+61 to +70	Flee	Tries to hide from party.
+71 to +80	Flee	Moves quickly away from party.
+81 to +90	Flee	Runs frantically away from party.

If the actions of the party cause a shift into Flee or Attack reaction from a less extreme reaction, the NPC receives the Initiative in the first Action Round. Upon reaching **0** (Friendly), no further shifting can occur for the party's benefit. If the die roll matches the NPC's Aggression × **10** exactly, interpret it to mean extreme interest, and sexual attraction if possible. A party can ruin this reaction by taking harmful actions. See 28.7 for explanation of use.

Friendly Shifts (TOWARDS 0)

No weapons showing.	Shift **2**
Character has military rank and NPC was/is in military	Shift **1**
Party spokesman's social standing within ± **1** of NPC's[A]	Shift **1**
Characters are disguised as allies or *are* allies.	Shift **2**
Characters have correct papers/ID or forgeries which pass inspection.	Shift **1**
NPC party outnumbers characters	Note[B]
Characters adopt friendly attitude toward NPC's[C]	Shift **1**
Characters adopt helpful attitude toward NPC's[C]	Shift **2**

Hostile Shifts (AWAY FROM 0)

Weapons showing.	Shift **1**
Weapons ready.	Shift **2**
Weapons aimed.	Shift **4**
Party spokesman's social standing beyond ± 1 of NPC's[A]	Shift **1**
Characters' disguise is seen through.	Shift **2**
Characters' false papers/ID are discovered.	Shift **3**
Characters appear to be the enemy or *are* the enemy.	Shift **4**
Characters outnumber the NPC party.	Note[B]
Characters cannot speak the NPC's language.	Shift **2**
Characters adopt an angry or disdainful attitude[C]	Shift **1**
Character(s) revealed as psionic; no NPC's psionic.	Shift **2**
Characters actually threaten NPC's[C]	Shift **2**

A. If the characters have not designated a spokesman, these shifts are ignored. **B.** The GM should shift **1** for every two characters or NPC's, rounding fraction up. **C.** These actions are verbally enacted by the players in their interplay with the GM.

[29.6] FIRE MODIFIER SUMMARY

Chance to Hit Target...

Base Hit Chance ***minus***

(Terrain Value × Terrain Multiplier) ***plus***

character's Dexterity Rating (if skilled) ***plus***

square of character's Skill Level

Any of the following modifiers that apply are also considered and are cumulative.

(Modifier) if the Firing Character...

(−20) ...moves on foot in same Action Round.

(−30) ...is driving a vehicle.

(−5) ...is in a moving vehicle.

(−10) ...is firing at more than one target in the same Action Round. Apply modifier to all fires for each target beyond one(e.g., if 3 different targets are fired at, all hit chances are reduced by 20).

(−5) ...is firing more than one shot with a ***recoil*** weapon in the same Action Round. Apply modifier to all fires for each fire beyond one (e.g., if 4 fires are made, reduce all hit chances by 15).

(Modifier) if the Target is...

(−45)...Very small **(−30)**...Small **(+20)**...Large

(+40)...One hex **(+20)**...Immobile

(Double Terrain Value)...Prone **(Hit impossible)**...Miniscule

The GM may apply further subtractions if the target is partially obstructed by a distinct object (remember, natural terrain features are accounted for by the Terrain Value and Multiplier). The Base Hit Chance and the Terrain Multiplier are listed on the Weapon Chart. The Terrain Value is listed on the Terrain Effects Chart. See 29.4 for additional weapon fire restrictions.

[30.8] TOXIN EFFECTS MATRIX

TOXIN TYPE► / COMPOSITION	NERVE	POISON	KNOCK-OUT	ACETIC	ALKALOID
Human/Humanoid	20t	P	15s	Ne	Ne
Mammalian	10t	15c	5s	Ne	R
Terran-Like	15s	P	10c	R	Ne
Protein	P	D	Ne	15s	10t
Carbon	D	Ne	15t	P	5c
Non-Carbon	Ne	10s	R	10c	P

Number results indicate Hit Strength (see 30.1 and 30.2). **Ne:** No effect. **R:** Creature raging; will attack for remainder of current Action Round and entirety of next Action Rounds with its Combat Rating doubled. **D:** Creature dazed; blacks out for a number of Action Rounds equal to the roll of one die. When the creature regains consciousness, it will be raging (result **R**). **P:** The individual loses one point from his Endurance Rating (Combat Rating, if creature) each Action Round. When the rating reaches **0**, he loses one point from his Strength Rating (Agility, if creature) each Action Round. When that rating reaches **0**, the individual is dead. **c:** Apply any hits received to creature's Combat Rating only. **s:** Treat as stun strength (see 30.4). **t:** Apply hits in accordance with Hit Table. However, after a number of minutes (four Action Rounds apiece) equal to the roll of one die, the effects of the hits disappear (unless the individual dies as a result of the hits). See 30.7 for explanation of use.

[30.9] HIT TABLE

ONE DIE PLUS HIT STRENGTH	PHYSICAL CHARACTERISTIC RATING POINTS LOST	Armor Result (NUMBER OF FIRES) 1	2*	3,4	5 or more	DAMAGE TO EQUIPMENT
1 or less	No effect	–	–	–	–	NE
2	1 Strength	–	–	–	–	NE
3	1 Dexterity	–	–	–	–	NE
4	2 Endurance	1	–	–	–	NE
5	2 Agility	1	–	–	–	NE
6	3 Endurance	1	1	–	–	NE
7	3 Strength	2	1	–	–	S
8	4 Endurance	2	1	1	–	S
9	4 Agility	2	1	1	–	S
10	5 Endurance	2	1	1	–	S
11	5 Strength	2	1	1	1	S
12	6 Endurance	3	2	1	1	S
13	6 Dexterity	3	2	1	1	S
14	7 Endurance	3	2	1	1	S
15	7 Agility	3	2	1	1	L
16	8 Endurance	3	2	2	1	L
17	8 Strength	4	3	2	1	L
18	9 Endurance	4	3	2	2	L
19	9 Agility	4	3	2	2	L
20	10 Endurance	4	3	3	2	L
21	10 Strength	4	3	3	2	L
22	11 Endurance	5	4	3	2	L
23	11 Dexterity	5	4	3	2	H
24	12 Endurance	5	4	3	3	H
25-26	13 Strength	5	4	3	3	H
27-28	14 Endurance	5	4	4	3	H
29-30	15 Agility	5	4	4	3	H
31-33	16 Endurance	6	5	4	4	P
34-37	17 Strength	6	5	5	4	P
38 or more	18 Endurance	6	6	5	5	T

*Use this column when involved in any close combat or accident. **NE:** No effect. **S:** Superficial damage. **L:** Light damage. **H:** Heavy damage. **P:** Partially destroyed. **T:** Totally destroyed. See 30.1 for explanation of use.

[32.3] HYPERJUMP TABLE

PERCENTILE DICE MINUS HYPERJUMP CHANCE	PSIONIC BACKLASH CHECK	JUMP OUTCOME AND SPACESHIP LOCATION
–40 or less	**No**	*Perfect jump;* perpendicular to the plane of the system ecliptic, directly above destination planet at the closest safe *jump point.*
–39 to –20	**–50**	*Perfect jump;* as above.
–19 to 0	**–40**	*Perfect jump;* as above.
+1 to +10	**–30**	*Good jump;* as above *plus one die* roll AU's beyond closest jump point.
+11 to +20	**–20**	*Good jump;* as above *plus two dice* roll AU's beyond closest jump point.
+21 to +30	**–10**	*Slight jump error;* as above *plus percentile dice* roll AU's beyond closest jump point.
+31 to +40	**0**	*Minor jump error;* as above *plus* **10**× percentile dice roll AU's beyond closest jump point.
+41 to +50	**+10**	*Major jump error;* a perfect jump to the star nearest the destination star with the same Spectral Class letter.
+51 to +60	**+20**	*Major jump error;* the GM uses *one die* to determine the *random destination.* The destination star is used as the zero point.
+61 to +70	**+30**	*Jump randomized;* the GM uses *two dice* to determine the random destination. *Sol* is used as the zero point.
+71 to +80	**+40**	*Jump failure;* the hyperjump does not occur and the spaceship's jump engine suffers *heavy damage.*
+81 to +90	**+50**	*Jump randomized;* the GM uses *percentile dice* to determine the random destination. *Sol* is used as the zero point.
+91 or more	**+60**	*Jump disaster;* within the gravity wells of the destination star system. Use the Equipment Damage column of the Hit Table (30.9) to check for spaceship damage; roll *two dice* and *add* **15** to the dice result.

See 10.0 and 32.2 for explanation of use.

Random Destination: The GM secretly rolls the indicated die or dice three times to determine three coordinates. The first roll determines the **X** coordinate; the second roll the **Y** coordinate; and the third roll the **Z** coordinate. If the result of a roll is an even number, the coordinate is positive; if the result is an odd number, the coordinate is negative. The GM secretly locates the three coordinate results on the Intersteller Display and informs the characters that they are lost in space. A character may attempt an astronomy skill task to determine their location (see 12.0). It is possible that a random destination will lie off the Interstellar Display.

[32.5] INTERSTELLAR ROUTE CHART

	DESTINATION STARPORT ½	1	2	3	4	5 EARTH
½	None	None	0/0/2	0/0/6	0/0/10	0/0/15
1	None	0/0/5	0/0/10	0/2/15	0/6/20	2/10/15
2	0/0/2	0/0/10	0/10/20	2/15/25	6/20/30	10/25/35
3	0/0/6	0/2/15	2/15/25	10/20/30	15/25/35	20/30/45
4	0/0/10	0/6/20	6/20/30	15/25/35	20/35/45	30/40/50
5 EARTH	0/0/15	2/10/25	10/25/35	20/30/45	30/40/05	–

If the distance (in light years) is equal to or less than the first number, a **green** jump route exists. If the distance is greater than the first number but less than or equal to the second number, an **amber** jump route exists. If the distance is greater than the first and second numbers, but less than or equal to the third number, a **red** jump route exists. See 32.4 for details.

[33.5] INTERPLANETARY ROUTE CHART

	DESTINATION SPACEPORT ½	1	2	3	4
½	–	R	R	R	A
1	R	R	A	A	A
2	R	A	A	G	G
3	R	A	G	G	G
4	A	A	G	G	G

R: Course Red. **A:** Course Amber. **G:** Course Green. **(–):** No route. See 33.5 for details.