

**Notes from Hades**

**T**his last month has gone much better for me than the one prior. No computer problems, and the cable modem has really made using the internet reasonable. Plus, the first web installment of *S.O.B.* has gone quite well. Thanks to everyone who gave me their comments. I have already incorporated many of them, and I intend to experiment with others over the next few issues to see how people like it best. Also, please let me know if you do not want your snail mail address posted as part of the web zine.

Not much to report on the home front except some very weird weather. A couple of weeks ago, we had a weekend where temperatures got up into the 80s (that's about 30 for those folks using Celsius). Then, in the matter of a couple of days, we had an arctic storm come through which plunged temperatures down into the 40s (about 5 C). That, and with the power crisis we have been having, things have been interesting. We have not been subjected to a rolling blackout yet, but it is a virtual certainty by this summer.

This issue's deadline to **Tuesday, March 20 at 5:00 p.m.**

**Pacific Time.** Please note that games that are run by guest GMs or in a subzine could be on a different schedule, so look at the games themselves. **Please do not call or fax orders after 10:00 p.m. Pacific time.** My wife and I tend to retire early.

Contents

<b>Howling at the Moon</b>	Letter Column	Page 1
<b>Feral Dogs</b>	Machiavelli	Page 2
<b>Citizen Dog</b>	Machiavelli	Page 2
<b>New Tricks</b>	Machiavelli	Page 3
<b>Doggin' It</b>	Silverton	Page 4
<b>Rover</b>	Liftoff!	Page 5
<b>Dog Days</b>	History of the World	Page 7
<b>Fenris</b>	Settlers of Catan	Page 7
<b>Canes Venatici</b>	Outpost	Page 8
<b>Dog Tired</b>	Kremlin	Page 9
<b>Hounds of Tindalos</b>	New World	Page 10
<b>Trivia Quiz</b>		Page 10
<b>Pedagogy</b>		Page 11

**Game Openings**

**Off the Leash.** Gunboat Machiavelli.

This game will start when the next Machiavelli game ends. Scenario and specific rules to be determined at game start by player vote, as usual. Have 8. You are signed up if this box is checked:

**Pavlov.** Dune. We will use the three variant powers (Bene Tleilaxu, Ixians, and Lansraad). Have Steve Koehler and Bill Scharf. Will take up to 4 more.

**Hyena.** Merchant of Venus. Will use the Fast Setup, Lost ? Box, Own Species Bonus, Customized Spaceships, and Agents, Bases, and Second Ships variant rules. Will use the combat rules if a majority of players agree. If so, the Variable Nova Balls and Mercenaries variant rules will also be used. Have Andy Lewis, Dennis Cain, Chris Geggus, and Bob Robles, need 2 more. **This game will start next issue with whoever is signed up at that time.**

**Dog Show.** Age of Renaissance. Have Bob Robles, Paul Bolduc, Caleb Cousins, Ward Narhi, and Dennis Cain, will take 1 more.

**Wolfhound.** Seafarers of Catan. This is a game that expands on the original Settlers of Catan to include sea travel, but is very similar to the original. Exact scenario to be determined. This will start after Fenris has ended. Have Tom Howell, Brendan Whyte, Phil Reynolds, and Joe Carl, will take up to 2 more.

Wish List

**Machiavelli.** This game will start when the next game ends after Off the Leash begins. Scenario and specific rules to be determined at game start by player vote, as usual. Have Phil Reynolds, Joe Carl, Bob Robles, and Brendan Whyte, will take up to 4 more.

**Kremlin.** This game will start when Dog Tired ends. Have Any Lewis, Pasquale Giovine, and Mike Scott, will take 3 more.

**In general, game ownership is recommended, but not required.**

Note that a subscription to *S.O.B.* is not required to play in a game run by flier, but that a game fee will be charged to non-subbers.

*S.O.B.* is a zine of unusual postal games, and anything else I feel like including. Your publisher is:

**Chris Hassler a.k.a. Cerberus**  
**2000 S. Armour Court**  
**La Habra, CA 90631**  
**Phone: (562) 690-7827**  
**Fax: (562) 690-7827**  
**chassler@adelphia.net**

**On the Web at: <http://home.adelphia.net/~chassler>**

Subscriptions cost \$1.50 per issue (\$2.25 overseas).

**Howling at the Moon**  
**The S.O.B. Letter Column**

**Bob Robles**

Book review: 'The Federalist Papers' by Alexander Hamilton, James Madison, and John Jay. It took me 2 1/2 years and several dozen of my children's swim meets to finish this collection of essays on the US Constitution. I would recommend this for anyone who wishes to understand the US constitution, most especially the current Supreme Court as well as Congress.

*[I actually have a copy of this one, and although I have not read all of the essays, after our election fiasco I did read the article of the Constitution as well as the accompanying essay on the Electoral College. It reinforced my long-held belief that the Electoral College should be abolished and the President be popularly elected. While, on the whole, our Constitution is a remarkable document, that particular piece of it is a very poorly worked out*

*compromise, and it is long overdue for a change. Not that I think such change is likely, since both parties and all smaller states benefit from the inequities the Electoral College perpetrates.]*

**Andy York**

Glad that you were able to get through your upgrade. Just be careful next time if you hire someone - there are lots of folks who advertise that they can do work, but are basically inept.

*[I was fortunate that the folks I called to fix it were able to do so with minimal time or cost.]*

Also, be wary of cable modems and security of your computer. Most (if not all) providers are not worried about security, they expect the user to perform that

function. So, if you don't have a solid firewall on your side of the wire, you are wide open to hackers. I've talked to folks with a firewall on a cable modem and they are scanned for security holes hundreds of times a day!!

[On the advise of a colleague, I downloaded a free firewall program called Zone Alarm. It blocks unauthorized access to my computer, and will give me alerts whenever such access is attempted. So far, it has been quite effective.]

## Feral Dogs

### Advanced Game, no Optional Rules, Black Press, Ultimate Victory, Gunboat Summer 1465

Deadline/Fall 1465 3/20 Tuesday

Milan is quickly occupying much of the former Venetian empire, while the Pope maneuvers for Venice's final elimination. France and Naples remain quiet.

#### Expenditures

Venice spends 3 ducats to counterbribe F Upper Adriatic

#### Orders

- France : A AVIGNON to Turin, A PROVENCE to Turin, F GENOA holds, F CORSICA holds, F GULF OF LIONS holds, F Western Mediterranean to CENTRAL MEDITERRANEAN
- Milan : A Tyrolea to MILAN, A HUNGARY to Slavonia, A CARINTHIA to Slavonia, A Carniola to ISTRIA, A Friuli to CARNIOLA, A Treviso to PADUA, A VERONA supports A Treviso to Padua, A MANTUA supports A Verona, A MODENA supports A Mantua
- Naples : A NAPLES supports G Naples, F BARI supports G Bari, G NAPLES supports A Naples, G BARI supports F Bari
- Papacy : A Arezzo to PERUGIA, A BOLOGNA supports A Ferrara, A FERRARA supports A Bologna, A CROATIA supports F Dalmatia, A Ragusa to ANCONA, F TYRRHENIAN SEA holds, F LOWER ADRIATIC transports A Ragusa to Ancona, F HERZEGOVINA supports F Dalmatia, F DALMATIA supports A Croatia
- Venice : A BOSNIA to Dalmatia, F Upper Adriatic to VENICE

#### Notes

Both draws fail with 5 no votes each.

#### Press

**France – Naples:** You know...I'm thinking you've NMRed out of the game.

**Milan – Pope:** It seems to me that you agree about our new boundaries (Ferrara and Croatia for you). In the case we shall have peace between us after the end of the war campaign.

**Milan – France:** I moved away Tyrolea also.

**Milan – Venice:** Thank you.

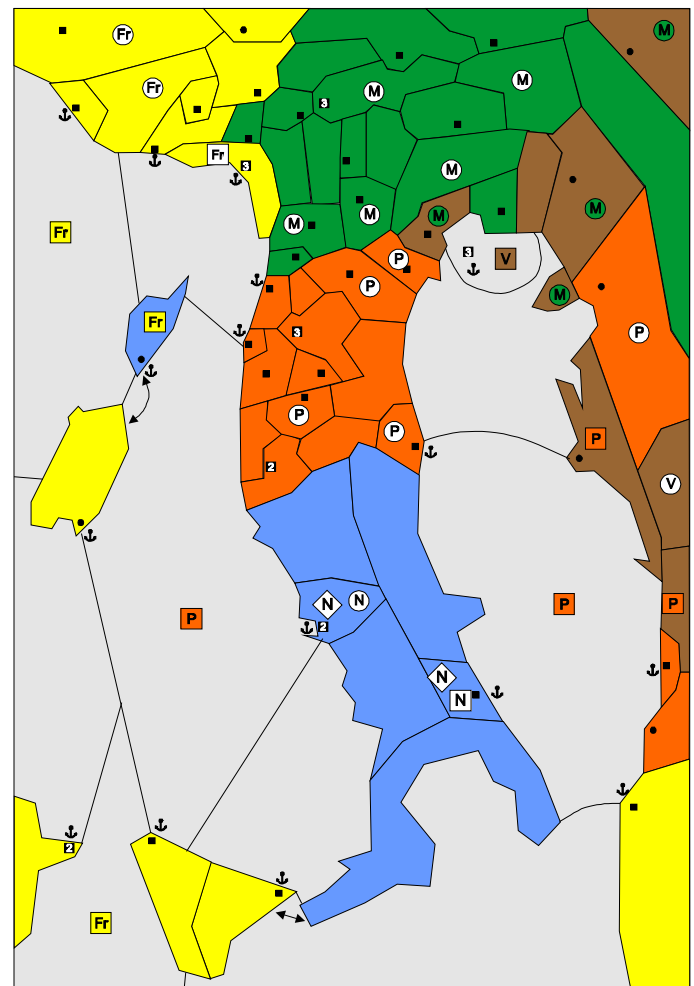
**Naples – France:** You are welcome to Corsica - let me know how I can help you any Further.

**Naples – Papacy and France:** Doesn't it seem like Milan is protesting too much? If anyone is going to make a run for a solo it is him. Venice vacated everything and Milan professes loyalty to France while subtly trying to get France and the Pope fighting. I'm not fooled! Are you?

**Pope – Milan:** The borders you suggested are fine with me. If Venice does something smart for a change, like move his fleet to Venice, then I'll need to borrow Pad to attack him. Pad will be returned immediately upon Venice's

extermination, and I will not force my way into Pad, I will only walk in with your permission.

#### "Feral Dogs"



○ Army □ Fleet ◇ Garrison ◆ Autonomous Garrison ◊ Besieged Garrison

**Pope – France:** You are clearly the leader here. I'll follow you as you direct. I don't think I'll need help to fight Venice any longer so save your money for your own home defense.

**Venice – All:** Run away! Run away!

## Citizen Dog

### Advanced Game, Plague, Famine, Special Military Units, and Conquest, White Press, Ultimate Victory Summer 1461

Deadline for Fall 1461: 3/20 Tuesday

Naples appears to be in trouble as Venice launches his invasion in earnest. Austria and Milan make some progress against France, but France is not out of it yet.

#### Spring 1461 Retreats

Naples A Bologna retreats to Florence

#### Orders

AUSTRIA (Robles): A AVIGNON besieges, A SWISS supports A Avignon, A Carinthia to TYROLEA

#### Orders (cont.)

FRANCE (Scott): A MARSEILLES supports G Avignon convert to A, A (EM). Provence supports G Avignon convert to A (cut, DISLOGGED, retreat Turin, OTB). G AVIGNON convert to A

MILAN (Giovine): A PAVIA supports Austrian A Swiss to Turin (nso), A (EM) Saluzzo to PROVENCE, A Montferrat to SAVOY, A Fornova to MODENA, A Bergamo to MILAN, A Cremona to MANTUA, F GENOA supports A Montferrat to Savoy

NAPLES (Narhi): A FLORENCE holds, F LIGURIAN SEA supports Milan A Saluzzo to Provence, F TYRRHENIAN SEA TO Naples, F GULF OF NAPLES to Naples, F PALERMO to Ionian Sea

VENICE (Grib): A BOLOGNA holds, A Aquila to SPOLETO, A Bari to AQUILA, F VENICE holds, F Upper Adriatic to ANCONA, F Lower Adriatic

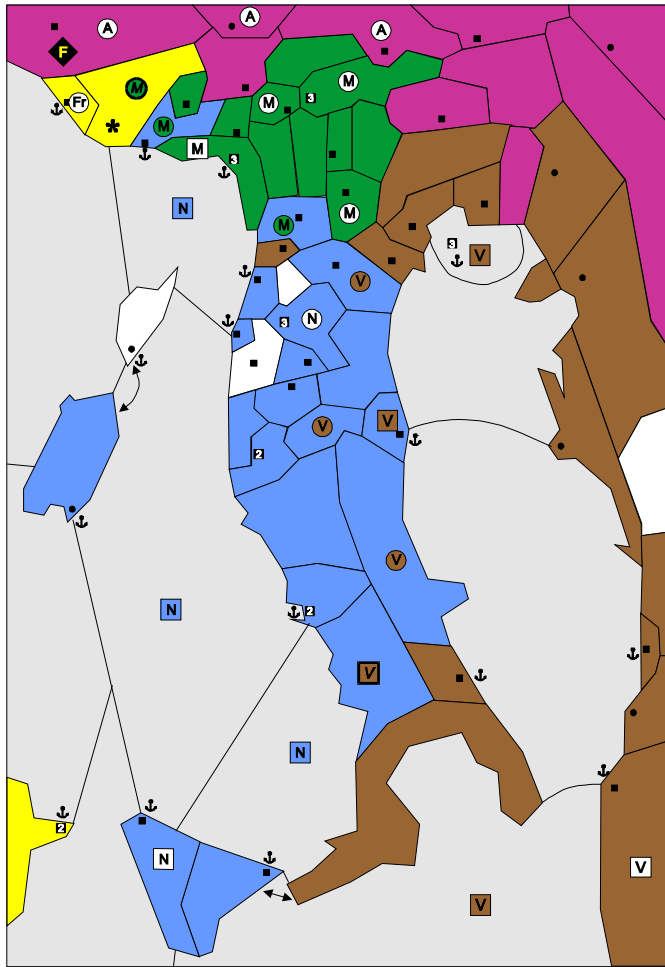
to IONIAN SEA, F DURAZZO supports F Lower Adriatic to Ionian Sea, F (EM) Otranto to SALERNO

Press

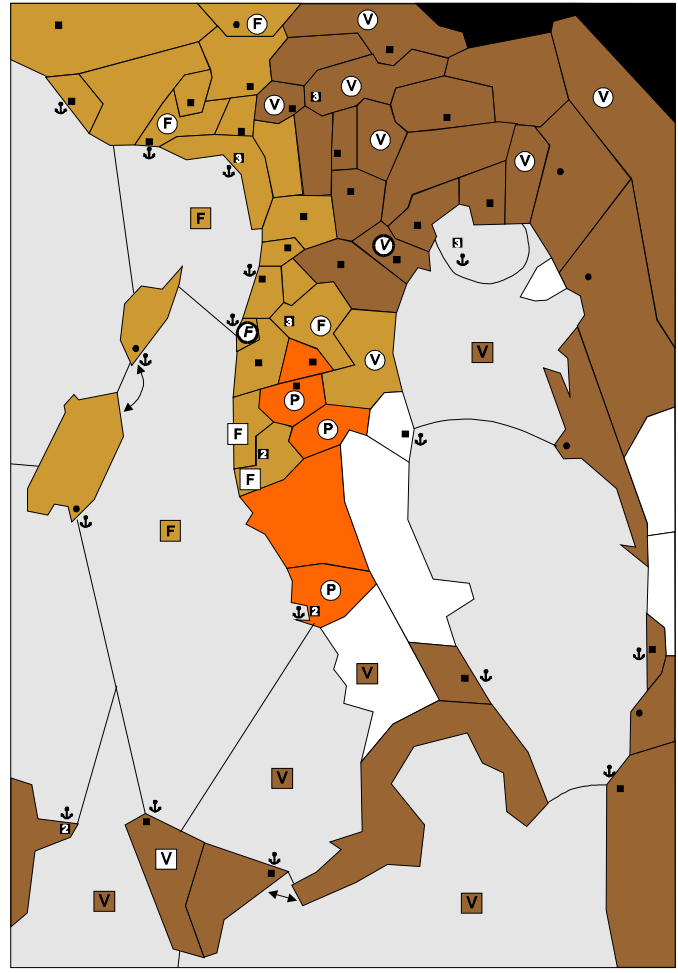
**Venice – All:** I'm finally getting back on line by the time you read this. My Gateway computer disaster may be over after a new motherboard, C-drive, and IDE controller card.

**Venice – Austria and Milan:** Now you boys wouldn't be planning anything shady since I've been out of communication, would you?

Citizen Dog



New Tricks



○ Army □ Fleet ◇ Garrison ◆ Autonomous Garrison ◆ Besieged Garrison

○ Army □ Fleet ◇ Garrison ◆ Autonomous Garrison ◆ Besieged Garrison

New Tricks

**Advanced Game, Plague, Famine, Special Military Units and Conquest, Black Press, Ultimate Victory  
Spring 1259**

**Deadline for Summer 1259: 3/20 Tuesday**

*A single hold-out prevents a peace. Who is it?*

Builds

		Treas	Cost	Rem
<b>Flo</b>	Maintains G Florence, F Tyrrhenian Sea, F Patrimony, F Rome, A Swiss, A Provence, A Savoy, F Ligurian Sea, no new builds	53	27	26
<b>Pap</b>	Maintains all, builds A Perugia	15	9	6
<b>Ven</b>	Maintains all, builds A (Elite Professional) Padua, F Venice	56	48	8

Expenditures

Florence spends 3 ducats for Famine Relief in Florence

Orders

FLORENCE (Robles) A SWISS holds, A Provence to SAVOY, A (EM) Savoy to PIOMBINO, F LIGURIAN SEA transports A Savoy to Piombino, F TYRRHENIAN SEA supports F Rome, F PATRIMONY supports F Rome, F Rome supports F Patrimony, G FLORENCE converts to A,

Orders (cont.)

PAPACY (Narhi) A NAPLES holds, A SPOLETO holds, A PERUGIA holds  
 VENICE (Reynolds) A TYROLEA holds, A Como to MILAN, A PAVIA holds, A Verona to BERGAMO, A FRIULI holds, A SLAVONIA holds, A Bologna to URBINO, A (EP) Padua to FERRARA, F IONIAN SEA holds, F MESSINA to GULF OF NAPLES, F PALERMO supports F Messina to Gulf of Naples, F Gulf of Naples to SALERNO, F CENTRAL MEDITERRANEAN supports F Messina to Gulf of Naples (imp.), F Venice to UPPER ADRIATIC

Notes

The Florence/Venice draw fails with 1 no vote. It has been re-proposed.

Summer 1259 Plague

**Good Year: No Plague!**

Press

**Pope – Florence/Venice:** I voted yes on the draw. One of you is voting no.  
**Venice – All:** I still want the draw with Florence, but seeing that it has yet to pass, I must muscle up and assume this game is going to be dragged out longer....

**Doggin' It**

**Turn 17, Phases IV-VII, Turn 18, Phases I-III**

**Turn 18, Phases IV-VII, Turn 19, Phases I-III due: 2/13 Tuesday**

**Turn 17**Construction and Operation

**Red** (Scharf) operates claims #7 (\$400, ½ gold), #19 (\$250, ½ silver), and #52 (\$100, 4 coal). Delivers 3 silver to Denver from #17 and 2½ silver to Denver from #19 for \$22,000. Gains \$2700 in passenger revenue.

**Green** (Narhi) operates claims #58 (\$100, 3 coal) and #20 (\$200, 1 silver). Delivers 1 silver from Leadville to Denver for \$4000. Gains \$1400 in passenger revenue.

**Brown** (Carl) operates claims #60 (\$100, 3 coal) and #63 (\$150, 3 coal). Delivers 6 coal from Durango to Santa Fe for \$3600.

**Gray** (Cain?) NMRs (orders supplied by GM) operates claims #54 (\$200, 4 coal), and #55 (\$200, 3 coal), #51 (\$100, 5 coal). Delivers ½ silver from Ouray to Salt Lake City for \$1000 and 7 coal from Bowie #54 to Salt Lake City for \$3500. Gains \$1250 in passenger revenue.

**Gold** (Bolduc) operates claims #44 (\$100, 2 coal), #39 (\$250, 1 lumber), #12 (\$250, 1 silver), #34 (\$200, 3 lumber), #47 (\$100, 3 coal), and #35 (\$200, 2 lumber), delivers 3 silver from Eureka to Salt Lake City for \$6,000, delivers 6 lumber from #34 to Salt Lake City for \$7200, collects \$100 in passenger revenue.

**Blue** (Martin) operates claims #66 (\$200, 3 coal) and #68 (\$200, 3 coal), delivers 9 coal from Raton to Denver for \$5,400, and 3 lumber from South Fork to Pueblo for \$3000. Gains \$2700 in passenger revenue.

Commodity Prices

Gold: \$7000	Lumber (S.L.C.): \$600	Coal (S.L.C.): \$500
Silver (Denver): \$2400	Lumber (Pueblo): \$1000	Coal (Pueblo): \$400
Silver (S.L.C.): \$1600	Lumber (Santa Fe): \$800	Coal (Santa Fe): \$500
Lumber (Denver): \$1000	Coal (Denver): \$400	

**Turn 18**Move Prospectors and Surveyors

**Red** (Scharf) surveys Steamboat Springs to Walden, prospects #53.

**Green** (Narhi) surveys Meeker to Rangely, no prospecting.

**Brown** (Carl) no prospecting or surveying

**Gray** (Cain) surveys Rangely to Elk Springs, prospects passenger line 11

**Gold** (Bolduc) surveys Dolores to Rico, prospects #22

**Blue** (Martin) prospects the deck, no surveying.

Dispute Resolution

No disputes. Blue draws claim #46 at Price from the deck. He has first option to purchase at \$400. Red pays \$1400, Green pays \$600, Gray pays \$2100, and Gold pays \$1300.

Press

**Red – GM:** How long are we playing this? (Which turn is the last one?) I'm sure I'm not the only one who's forgotten.

**Cerberus – All:** We are playing this the full 24 turns.

Notes

Dennis Cain has NMRed and I am out of standbys. I am trying to locate standbys, and I will notify the players by email once one is located.

The Players

Player	Color	Starting Location	Money	Personnel
Bill Scharf	Red	Denver	\$40,200	S+I, P
Ward Narhi	Green	Denver	\$42,700	S, P+1
Joe Carl	Brown	Pueblo	\$15,700	S+I, P
Dennis Cain?	Gray	Salt Lake City	\$21,500	S, P+1
Paul Bolduc	Gold	Salt Lake City	\$30,800	S+I, P
Brad Martin	Blue	Santa Fe	\$68,950	S, P+1

Owned Claims

#	City	Owner	Goods	Type	Operation
18	Leadville	Red	1	Silver	Depleted
7	Cripple Creek	Red	3	Gold	\$400
19	Leadville	Red	0	Silver	\$250
52	Craig	Red	4	Coal	\$100
53	Craig	Red	N	Coal	\$100
58	Crested Butte	Green	10	Coal	\$100
29	Lake City	Green	2	Silver	\$150
28	Lake City	Green	N	Silver	\$200
20	Leadville	Green	0	Silver	\$200
42	Vallecitos	Brown	1	Lumber	Depleted
64	Walsenburg	Brown	0	Coal	\$250
24	Ouray	Brown	N	Silver	\$200
60	Durango	Brown	2	Coal	\$100
21	Westcliffe	Brown	1	Silver	\$150
63	Alamo	Brown	8	Coal	\$150
54	Bowie	Gray	0	Coal	\$200
55	Bowie	Gray	6	Coal	\$200
51	Rangely	Gray	5	Coal	\$100
44	Scofield	Gold	5	Coal	\$100
39	Lumberton	Gold	5	Lumber	\$250
12	Eureka	Gold	1	Silver	\$250
34	Dolores	Gold	0	Lumber	\$200
47	Sunnyside	Gold	7	Coal	\$100
35	Dolores	Gold	2	Lumber	\$200
22	Telluride	Gold	N	Silver	\$200
66	Trinidad	Blue	3	Coal	\$200

#	City	Owner	Goods	Type	Operation
68	Raton	Blue	0	Coal	\$200

Owned Passenger Lines

#	Type	Route	Payoff	Owner	Notes
7	B	Denver – Leadville	\$600	Red	
9	B	Denver – Grand Jct.	\$1350	Red	Discard when 15 is taken. Good for \$1350 toward card 14 or 15
10	B	Pueblo – Grand Jct.	\$750	Red	Discard when 17 is taken. Good for \$750 toward card 17 or 18
2	A	Denver – Colorado Springs	\$250	Green	
3	A	Denver – Pueblo	\$400	Green	
8	B	Denver – Aspen	\$650	Green	
1	A	Denver – Boulder	\$100	Green	
12	B	SLC – Grand Jct.	\$1250	Gray	Discard when 15 is taken. Good for \$1250 toward card 14 or 15
11	B	Salt Lake City – Grand Jct.	\$700	Gray	Discard when 17 is taken. Good for \$700 toward

#	Type	Route	Payoff	Owner	Notes
					card 17 or 18
5	A	SLC – Provo	\$100	Gold	
6	A	Pueblo – Santa Fe	\$600	Blue	
13	C	Denver – Santa Fe	\$2100	Blue	

Available Claims

#	City	Type	Claim	Operation
46	Price	Coal	\$400	\$200
13	Eureka	Silver	\$300	\$200
50	Elk Spings	Coal	\$300	\$100
43	Coalville	Coal	\$300	\$150
36	Pagosa Springs	Lumber	\$200	\$100
14	Aspen	Silver	\$500	\$200
57	Crested Butte	Coal	\$400	\$200

Available Passenger Lines

#	Type	Route	Payoff	Cost	Notes
17	C	SLC – Pueblo	\$3000	D x \$75	
15	C	Denver – SLC	\$4000	D x \$100	
16	C	Santa Fe – Leadville	\$800	D x \$50	
14	C	Denver – Salt Lake City	\$2700	D x \$75	May not be taken by player who has card 18
18	C	SLC – Colorado Springs	\$3000	D x \$75	May not be taken by player who has card 14

**Rover**

1965

1966 due: 3/20 Tuesday

1965

Saved Cards

**Moonshooter Unlimited** fortunate accident (satellite or probe)  
**Cinnabar** Government order: Next planned launch must be manned.  
**Republic of Texas** fortunate accident (capsule)  
**SCIFI** astronauts cost only 1MB each, computer breakthrough

Purchases

**Penny Pines** (Scharf) spends 6 MB for 2 liquid fuel strap-ons, 4MB for an interplanetary satellite, 6MB for 3 astronauts (Buck Rodgers, Flash Gordon, and David Bowman), 48MB for 4 two-stage rockets, and 12MB for 2 two-person capsules.

**Moonshooter Unlimited** (Bolduc) buys Docking Module program for 18MB, 1 three-person capsule for 12MB, Three Stage Rocket program for 84MB, and 1 astronaut (Mata Hari) for 2MB.

**Cinnabar** (Carl) buys an astronaut (Giovanni) for 2MB, 2 one-stage rockets for 6MB, 1 two-stage rocket for 12MB, and the EVA Suit program for 18MB.

**Republic of Texas** (York) buys the Two-Person Capsule program for 24MB.

**SCIFI** (Cain?) NMRs! Orders supplied by GM. Buys astronaut (Isaac Asimov).

Research and Development

**Penny Pines** (Scharf) D: 1 die (3) = 3% to Max R&D. 2MB spent. e: 8 dice (2, 2, 3, 4, 4, 5, 6, 6) = 32%. 32MB spent.

**Moonshooter Unlimited** (Bolduc) c: 6 dice (1, 1, 1, 2, 2, 4) = 11%. 30MB spent. C: 7 dice (2, 2, 4, 4, 5, 6, 6) = 29%. 42MB spent.

**Cinnabar** (Carl) EVA: 8 dice (1, 1, 2, 3, 4, 5, 6, 6) = 28%. 8MB spent. e: 7 dice (1, 1, 2, 3, 4, 5, 5) = 21%. 28MB spent. D: 1 die (5) = 5% to Max R&D. 2 MB spent.

**Republic of Texas** (York) B: 8 dice (2, 3, 3, 3, 3, 4, 6, 6) = 30% to Max R&D. 32MB spent. b: 8 dice (1, 1, 1, 1, 2, 4, 4, 6) = 20%. 16MB spent. EVA: 8 dice (1, 1, 2, 3, 4, 5, 6, 6) = 28% to Max R&D. 8MB spent.

**SCIFI** (Cain?) C: 6 dice (1, 2, 4, 4, 5, 6) = 22%. 36MB spent. c: 6 dice (1, 1, 1, 3, 5, 6) = 17%. 30MB spent.

Declare Future Missions

**Penny Pines** (Scharf) declares 2. **Moonshooter Unlimited** (Bolduc) declares 2. **Cinnabar** (Carl) declares 3. **Republic of Texas** (York) declares 3. **SCIFI** (Cain) declares 1.

Your missions are:

Missions

No rushing. Launch Order: Moonshooter Unlimited (Venus Flyby in progress), Republic of Texas, Republic of Texas, Republic of Texas, Cinnabar, Cinnabar, Cinnabar, Moonshooter Unlimited, Moonshooter Unlimited, Penny Pines, Penny Pines

**Moonshooter Unlimited** continues with a Venus Flyby. Venus Orbital Burn: 76%<93%, Venus Orbital Activities: 05%<93%. Mission success. +8MB to budget.

**Republic of Texas** launches a Lunar Probe. Liftoff: 74%<87%, Earth Orbital Burn: 10%<82%, Earth Mission Burn: 34%<82%, Lunar Orbital Burn: 96%>82%. Mission failure. +1% to 3 and B. -6MB to budget.

**Republic of Texas** launches an Manned Orbital with Spacewalk (Spenny). Liftoff: 18%<98%, Earth Orbital Burn: 60%<85%, Earth Orbital Activities: 15%<85%, Spacewalk: 91%<98%, Earth De-Orbital Burn: 25%<85%, Re-Entry:

09%<85%, Recovery: 77%<85%. Mission success. +1% to a, Spenny to 20%, +5MB to budget.

**Republic of Texas** launches Lunar Probe. Liftoff: 39%<88%, Earth Orbital Burn: 82%<83%, Earth Mission Burn: 62%<83%, Lunar Orbital Burn: 11%<83%, Lunar De-Orbital Burn: 57%<83%, Photoreconnaissance: 26%<62%, Lunar Landing: 50%<83%. Mission success. +1% to 2 and B, +15% to Photorecon, +20MB to budget.

**Cinnabar** launches a Venus Flyby. Liftoff: 80%<94%, Earth Orbital Burn: 69%<93%, Earth Mission Burn: 77%<93%. Mission continues next year. +1% to B.

**Cinnabar** attempts to launch a Manned Lunar Pass, but does not have a sufficient booster. Mission scrubbed. -10MB to budget.

**Cinnabar** attempts to launch a Manned Lunar Orbital, but does not have a sufficient booster. Mission scrubbed. -10MB to budget.

**Moonshooter Unlimited** launches an Orbital Satellite. Liftoff: 94%>89%, explosion on the pad, launch facility destroyed, must be rebuilt for 25MB. +1% to A, -3MB to budget.

**Moonshooter Unlimited** launches an Unmanned Orbital. Liftoff: 13%<94%, Earth Orbital Burn: 10%<84%, Earth Orbital Activities: 48%<84%, Earth De-Orbital Burn: 67%<84%, Re-Entry: 01%<84%, Recovery: 94%>84%. Mission failure. +1% to B and c.

**Penny Pines** launches a Lunar Flyby. Liftoff: 86%<91%, Earth Orbital Burn: 55%<91%, Earth Mission Burn: 76%<91%, Lunar Orbital Burn: 34%<91%, Lunar Orbital Activities: 22%<91%. Mission success. +1% to B, 2, +5% to Photo Recon, +2MB to budget.

**Penny Pines** launches a Manned Lunar Pass with Clifford Russell and Buck Rodgers. Liftoff: 14%<82%, Earth Orbital Burn: 58%<92%, Earth Mission Burn: 22%<92%, In-route Activities: 68%<82%, Lunar Mission Burn: 07%<92%, In-route Activities: 18%<82%, Earth Orbital Burn: 47%<92%, Earth Orbital Activities: 73%<82%, Earth De-Orbital Burn: 10%<82%, Re-entry: 45%<82%, Recovery: 98%>82%, touchdown is off-target, crew ill but OK. Mission success. +1% to D, F, and b, Russell to 60%, Rodgers to 10%, +15MB to budget.

## Players

Player Name	Dennis Cain	Joe Carl	Paul Bolduc	Bill Scharf	Andy York
Country	SCIFI	Cinnabar	Moonshooter Unlimited	Penny Pines	Republic of Texas
1965 Budget	70	76	132	146	72
Cash	0	1	57	2	10
1-Orbital Satellite	0 / 97%	1 / 98%	0 / 95%	0 / 98%	0 / 98%
2-Interplanetary Satellite		0 / 93%	1 / 93%	0 / 92%	
3-Lunar Probe		0 / 71%	1 / 85%		0 / 86%
4-Docking Module	0 / 45%	3 / 50%	1 / 45%	1 / 95%	0 / 95%
A-One Stage Rocket	1 / 89%	2 / 79%	0 / 90%	1 / 93%	0 / 98%
B-Two Stage Rocket		0 / 95%	0 / 95%	4 / 92%	0 / 91%
C-Three Stage Rocket	1 / 71%		1 / 74%		
D-Liquid Fuel Strap-ons		3 / 85%		3 / 86%	
F-Kicker		1 / 41%		1 / 96%	1 / 95%
G-"Mega" Stage Rocket					
EVA Suits	98%	58%	98%	98%	98%
a-One Person Capsule	2 / 10%	0 / 79%	2 / 83%	1 / 86%	0 / 86%
b-Two Person Capsule		1 / 81%	0 / 85%	4 / 86%	1 / 40%
c-Three Person Capsule	1 / 65%		2 / 85%		
d-Two Person Module					
e-One Person Module		1 / 75%		1 / 69%	
f-Three Person Minishuttle					
h-Four Person Cap/Module					
Photo Recon	65%	70%	65%	75%	65%
Launch Facilities	3	3	2 (1 damaged)	2	3
Astronauts	3	4	4	4	7

Astronauts are: **SCIFI** (Arthur C. Clarke, 20%; Roger Zelazny, Isaac Asimov 0%), **Moonshooter Unlimited** (James Bond, 30%; Matt Helm, Austin Powers, 20%, Mata Hari, 0%), **Republic of Texas** (Ocnaschek, 30%; Spenny, 20%; Milbourn, 10%; Gallagher, Camden, Mitchell, 0%), **Penny Pines** (Clifford Russell, 60%, Buck Rodgers, 10%; Flash Gordon, David Bowman, 0%), **Cinnabar** (Jesse, 30%; James, Meowth, Giovanni 0%)

## 1966

### Draw Event Cards

**Bill Scharf:** Corporate investment, receive 1MB cash. -1MB to budget.

**Joe Carl:** R&D setback, -2 to each R&D die. +7MB to budget.

**Paul Bolduc:** Test Failure, -15% to three-stage rocket. -10MB to budget.

**Dennis Cain:** Corporate Investment, receive 8MB cash. +10MB to budget.

**Andy York:** Severe setback, pay 12MB or lose 20% on next two-stage rocket launch. +5MB to budget.

## Final Positions

Player Name	Dennis Cain	Joe Carl	Paul Bolduc	Bill Scharf	Andy York
Country	SCIFI	Cinnabar	Moonshooter Unlimited	Penny Pines	Republic of Texas
1966 Budget	68	76	132	158	101
Cash	10	1	1	39	2
1967 Budget	78	83	122	157	106

SCIFI is Space Conquest Interplanetary Federation, Incorporated.

## Dog Days

### Epoch IV Guptas, Goths, and Huns

#### Deadline for Epoch IV Byzantines, T'ang Dynasty, Arabs, and Khmers: 3/20 Tuesday

**Amorphous, Cadaverous, and Nebulous** (Reynolds) plays Kingdom in Southern Iberia (Army, city, and fort *Southern Iberia*, Roman army retreats to *Western Iberia*). Plays Empire Revives and places armies *Albion*, *Highlands*, and *Ireland*. GUPTAS: Army and Capital *Eastern Deccan* (Vedic City States retreat to *Eastern Ghats*), fleet *Bay of Bengal*, army *Ganges Delta* (city eliminated), *Irrawaddy*, *Szechwan* (vs. Han Dynasty; G: 6, 3; H: 5, 2; wins), *Sumatra*, *Malayan Peninsula* (vs. Mauryans; G: 4, 1; M: 5; loses), *Malayan Peninsula* (vs. Mauryans; G: 2, 2; M: 1; wins). Points: Dominance in India (6), Northern Europe (4), and Southeast Asia (4), Presence in Middle East (3), China (3), and Southern Europe (3), 1 Capital (2), 1 city (1), 1 Sea (2), and 2 Monuments (2) for 30 points.

**Gaming Through the Ages** (Lewis) plays Pestilence in *Dalmatia*. Greek City States lose 2 armies *Dalmatia*, Celts lose 1 army *Central Europe*, Romans lose 1 army *Balkans*, and Macedonia loses 1 army *Pindus*. GOTHS: Army *Danubia* (Roman army destroyed), *Balkans*, *Pindus* (city destroyed), *Morea* (vs. Macedonia; G: 2, 2; M: 1; wins), *Crete* (Treachery, automatic victory, Capital reduced to city), *Dalmatia* (vs. Greek City States; Go: 6, 3; Gr: 2; wins), *Central Europe*, *Lower Rhine*, *Baltic Seaboard*, and *Scandinavia*. Points: Dominance in

Southern Europe (6) and Northern Europe (4), Presence in North Africa (2), Middle East (3), China (3), India (3), and Southeast Asia (2), 1 Capital (2), 2 cities (2), and 1 Monument (1) for 28 points.

**The Triffids** (Geggus) plays Civil War in *Ganges Delta* (vs. Guptas; CW: 5, 4; G: 6; loses), *Malayan Peninsula* (vs. Guptas; CW: 5, 2; G: 6; loses), and *Irrawaddy* (vs. Guptas; CW: 5, 4; G: 6; loses). HUNS: Army *Western Steppe*, *Caucuses* (vs. Scythians; H: 1, 1; S: 5; loses), *Caucuses* (vs. Scythians; H: 5, 3; S: 1; wins), *Eastern Anatolia* (vs. Scythians; H: 4, 1; S: 5, 4; loses), *Eastern Anatolia* (vs. Scythians; H: 4, 1; S: 4, 1; H: 6, 3; S: 6, 6; H: 5, 4; S: 3, 2; wins), *Levant* (vs. Romans; H: 5, 4; R: 4; wins), *Upper Tigris* (vs. Romans; H: 6, 2; R: 1; wins), *Dneipr* (vs. Hsuing-nu; Hu: 6, 2; Hs: 1; wins), *Central Europe* (vs. Goths; H: 4, 3; G: 1; wins), *Dalmatia* (vs. Goths; Treachery automatic victory), *Northern Apennines* (vs. Romans; H: 4, 1; R: 1; wins), *Southern Apennines* (vs. Romans; H: 3, 3; R: 4; loses), *Southern Apennines* (vs. Romans; H: 3, 2; R: 6; loses), *Southern Apennines* (vs. Romans; H: 4, 2; R: 6; loses). Builds Monument *Central Europe*. Points: Dominance in Middle East (6), Presence in India (3), Southern Europe (3), and Northern Europe (2), 1 city (1), and 5 Monuments (5) for 20 points.

### Players

Player Name	Player Faction Name	Empire Strength Points	Victory Points
Kevin Wilson	Royal Manticoran Historical Society (Blue)	25	42
Caleb Cousins	Peoples who Need Peoples (Red)	26	44
Phil Reynolds	Amorphous, Cadaverous, and Nebulous (Black)	27	73
Andy Lewis	Gaming Through the Ages (Purple)	31	70
Ward Narhi	Kibbles and Bits (Orange)	35	44
Chris Geggus	The Triffids (Green)	39	78

### Final Positions

SUMERIANS: Capital and 3 armies in *Lower Tigris*.

**Amorphous, Cadaverous, and Nebulous**. Fleet *Bay of Bengal*. EGYPT: Army *Arabian Peninsula*. REBELLION: Army *Ceylon*. CELTS: Two armies, fort, and Monument *Albion*, two armies and fort *Ireland*, two armies *Highlands*, armies *Northern Gaul* and *Central Massif*. SOUTHERN IBERIAN KINGDOM: Army, fort, and city *Southern Iberia*. GUPTAS: Army and Capital *Eastern Deccan*, army and Monument *Ganges Delta*, armies *Irrawaddy*, *Malayan Peninsula*, *Sumatra*, and *Szechwan*.

**The Triffids**. MINOANS: Army and fort *Western Anatolia*. SUB-SAHARAN MIGRANTS: Armies *Congo Basin* and *South Africa*. MACEDONIA: Army, city, and Monument *Persian Plateau*, army and Monument *Zagros*, army *Hindu Kush*. HUNS: Army and Monument *Levant*, *Upper Tigris*, and *Central Europe*, armies *Eastern Anatolia*, *Caucuses*, *Western Steppe*, *Dneipr*, *Dalmatia*, and *Northern Apennines*.

**Peoples Who Need Peoples**. INDUS VALLEY: Armies *Western Deccan*, *Persian Salt Desert*. PERSIA: Army *Turanian Plain*. HSUING-NU: Army, city, and Monument *Great Plain of China*, armies *Mongolia*, *Yellow River*, *Eastern Steppe*, and *North European Plain*.

**Royal Manticoran Historical Society**. HAN DYNASTY: Army and city *Wei River*, armies *Chekiang*, *Tarim Basin*, and *Yangtse Kian*.

**Kibbles and Bits** Fleets *Western Mediterranean*, *Eastern Mediterranean*, *Black Sea*, and *Red Sea*. VEDIC CITY STATES: Two armies *Eastern Ghats*. ROMANS: Army, Capital, and Monument *Southern Apennines*, armies *Pyrenees*, *Western Iberia*, *Southern Iberia*, *Shatts Plateau*, *Libya*, *Nile Delta*, *Nubia*, and *Palestine*.

**Gaming Through the Ages** NILE KINGDOM: Army, city, and fort *Upper Nile*. MAYANS: Two armies and a Capital *Central America*. MAURYANS: Armies *Ganges Valley*, *Lower Indus*, *Persian Salt Desert*, *Mekong*, and *Si-Kyang*. GOTHS: Army and Monument *Morea*, army and city *Crete*, armies *Pindus*, *Balkans*, *Danubia*, *Lower Rhine*, *Baltic Seaboard*, and *Scandinavia*.

### Event Cards

### Epoch IV Empire

### Fenris

#### Turns 8.1 to 9.1

#### Deadline for Turns 9.2 to 10.2: 3/20 Tuesday

##### Turn 8

**Paul** Die roll = 7, moves Robber to F8 and steals a wheat from Chris.

**Ward** Die roll = 7, moves the Robber to W6 and steals a wool from Steve. Trades 1 grain to Kevin for 1 lumber and 1 ore. Builds a road at P5/Wasteland and a settlement at P5/H4/Wasteland.

During the special build turn, Kevin builds a settlement at F6/Sea/Sea.

**Steve** Die roll = 12, Steve gains 2 wool and a wheat, Bill gains 2 wheat. Builds a road at H4/Wasteland, and buys a development card (\_\_\_\_\_). During the special build turn, Bill upgrades P5/W4/L8 to a city.

**Chris** Die roll = 3, Paul receives 2 brick, Steve receives 1 lumber, and Chris receives 1 wheat. Buys a development card (\_\_\_\_\_).

**Kevin** Die roll = 7, moves the Robber to F9 and steals a wheat from Chris.

**Bill** Die roll = 8, Bill and Ward each receive 3 lumber, and Chris receives 1 wool.

##### Turn 9

**Paul** Die roll = 10, Ward receives 3 ore, Kevin receives 2 ore, and Chris receives 1 brick.

##### Open Trade Offers

Bill will give 1 lumber for 1 brick.

##### Turn 9 Dice Rolls

**Ward** 5                      **Steve** 5                      **Chris** 5                      **Kevin** 11                      **Bill** 8

##### Turn 10 Dice Rolls

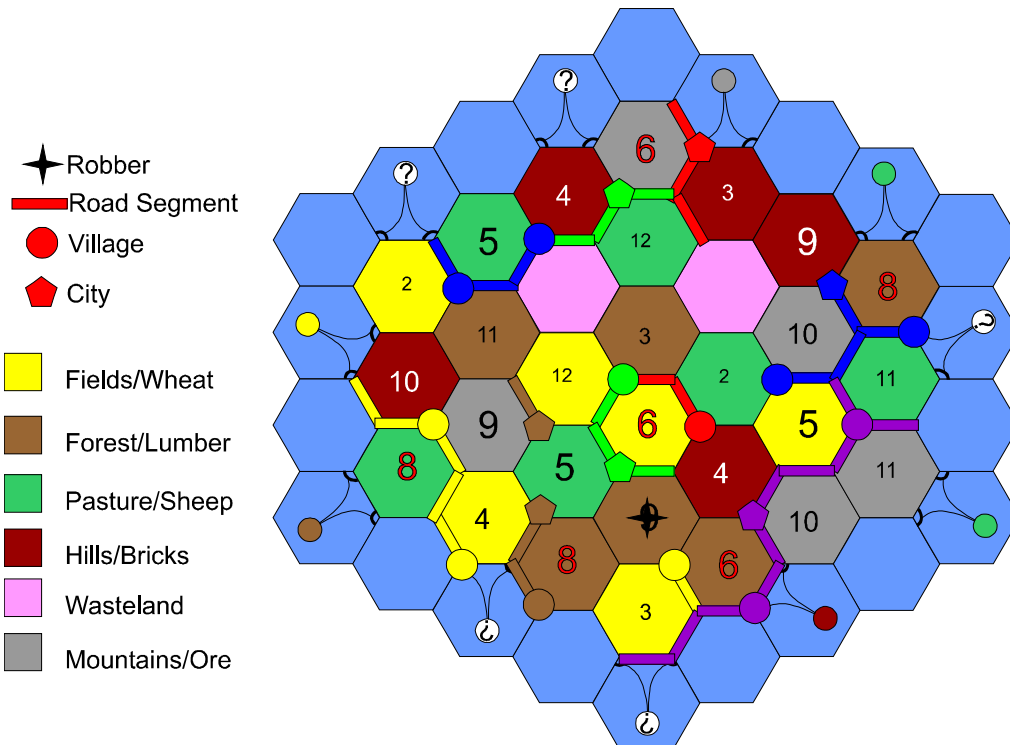
**Paul** 10                      **Ward** 10

##### The Players

Player	Color	Wheat	Sheep	Brick	Lumber	Ore	Development Cards	VP
Paul Bolduc	Red	1	1	4			1 Unplayed	3
Ward Narhi	Blue		1		3	5		6
Steve Koehler	Green	2	1		2		Soldier, 2 Unplayed	5
Chris Geggus	Yellow		1	1	2		Soldier, 2 Unplayed	3
Kevin Wilson	Purple	1				4		6*
Bill Scharf	Brown		1		5		Soldier	5

Your unplayed card(s) is(are): \_\_\_\_\_

\* Longest Trade Route





## Canes Venatici

### Turn 6

**Deadline for Turn 7: 3/20 Tuesday**

#### Commander Actions

**SUPERB** (Lowrey) buys a titanium factory (Or2, Or4, Wa5, Wa9, Wa10) and moves a population factor from an ore factory to man it.

**BarterTown V** (York) buys two population factors (Or5, Wa7, Ti8).

**HBDC V** (Wilson) opens the bidding on a Data Library at 15 Miller's gets it for 23 (Or2, Wa6, Wa7, Wa8). Opens the bidding on the second DL and gets it for 26 (Or1, Or4, Wa6, Wa7, Wa8).

**S.A.R.A.** (Cousins) buys a titanium factory (Or3, Or3, Wa6, Wa9, Wa9) and a population factor (Or5, Wa5).

**Miller's** (Scharf) passes

**Mystery Machine 2** (Lewis) opens the bidding on a Nodule for 25 and gets it (Or1, Or1, Wa5, Wa5, Wa8, HE discount). Opens the bidding on a second Nodule at 26 and gets it (Or3, Wa9, Wa9, HE discount).

**2113 Corporation** (Cain) NMRs! **Will Steve Koehler please submit standby orders!**

#### The Players

	Outpost Name	Commander	Factories	Upgrades	VP
1	Mystery Machine 2	Andy Lewis	OrF, OrF, WaF, WaF, WaF	HE, 2No	10
2	SUPERB	Michael Lowrey	OrF, OrF, WaF, WaF, WaF, TiF	No, HE	9
3	S.A.R.A.	Caleb Cousins	OrF, OrF, WaF, WaF, TiF	HE, No	9
4	BarterTown V	Andy York	OrF, OrF, WaF, TiF, P	HE, No	8
5	Miller's	Bill Scharf	OrF, OrF, WaF, WaF, WaF, WaF	2DL	7
6	HBDC V	Kevin Wilson	OrF, OrF, WaF, WaF, WaF	Wa, 2DL	7
7	2113 Corporation	Dennis Cain	OrF, OrF, WaF, WaF, WaF	HE	4

SUPERB is Space Urchin Planetary Evaluation and Recovery Board. HBDC V is Heavenly Bodies Development Company V. S.A.R.A. is Supremely Arrogant Republican A@#\$^&\*!

#### Available Upgrades

New Arrivals: Data Library, Orbital Lab, Ecoplants, Laboratory

Upgrade	Minimum Bid	Available	TBD
Data Library (DL)	15	1	0
Warehouse (Wa)	25	3	1
Heavy Equipment (HE)	30	0	0
Nodule (No)	25	0	0
Scientists (Sc)	40	0	5
Orbital Lab (OL)	50	1	4
Robots (Ro)	50	0	5

Upgrade	Minimum Bid	Available	TBD
Laboratory (La)	80	1	4
Ecoplants (Ec)	30	1	4
Outpost (Ou)	100	0	5

2113 Corporation discards Or1.

Your Production Cards:

## Dog Tired

**Turn 2 Funeral Commission through Parade**

**Turn 3 Cure Phase through Health Phase due: 3/20 Tuesday**

#### Funeral Commission

ORRP plays Assassination Attempt (40) on Niewitko. DR = 7, attempt fails. HLS denounce Purgemoff, DR= 12, Purgemoff is convicted and shot. Strychnin nominates Niewitko to Party Chief. The nomination passes unanimously.

#### Replacement

Niewitko promotes Krakemheads to KGB Head and ages to 82. Badenuff promotes by age to Defense Minister. Niewitko promotes Schukrutoff to Ideology Minister and Goferbok to Industry Minister and ages to 84. Shootemdedsky promotes to Economy Minister and Mischif to Sport Minister by age. K, N, O, and P become candidates.

#### Rehabilitation

FBI plays 5 IP on E. FBI plays General Amnesty (55). Rehabilitation is only 1IP per politician for everybody this turn. Krakemheads rehabilitates M and ages to 73. Strychnin rehabilitates Z and ages to 61. Niewitko rehabilitates G, S, and L and ages to 87.

#### Parade

Niewitko waves.

#### Politburo

Office	Politician	Condition	Influence
Party Chief	Petr Niewitko (D)	87	3 (HLS)
KGB Head	Karel Krakemheads (E)	73 +	5 (HLS), 6 (FBI)
Foreign	Mikail Strychnin (T)	61 ? ++	8 (RE), 1 (FBI), 1 (TCC)
Defense	Boris Badenuff (X)	56 ?	4 (IP)
Ideology	Lech Schukrutoff (B)	75	
Industry	Alexej Goferbok (C)	74	
Economy	Nikolai Shootemdedsky (H)	69	
Sport	Antonj Mischif (I)	68	

Politicians listed in **bold** are in the sanatorium.

**Candidates:** J, K, N, O, P

**People:** G, L (++) , M, R, S, U, V, W, Y, Z

**Siberia:**

**Kremlin Wall:** A, Q, F

Your cards: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Your undeclared influence: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Players

- |                    |                                 |
|--------------------|---------------------------------|
| Joe Carl           | Reform Expansionists            |
| Kevin Wilson       | October Revolution Reform Party |
| Chris Geggus       | Floridian Ballot Investigators  |
| Mike Scott         | The California Connection       |
| Bill Scharf        | Ideological Purists             |
| Steve Koehler      | Hard Line Stalinists            |
| HLS have one wave. |                                 |

**Hounds of Tindalos**

**Turn 2**

**Turn 3 due: 3/20 Tuesday**

Planning

**English** maintain 3 ships (\$12), buy 1 ship (\$12) and 4 soldiers (\$40) for \$64.

**French** maintain 4 ships (\$16) and buy 4 soldiers (\$40) for \$56.

**Portuguese** maintain 4 ships (\$15) and buy 4 soldiers (\$40) for \$56.

**Spanish** NMRs (orders supplied by GM) maintain 4 ships (\$16) buy and 4 soldiers (\$40) for \$56.

Outbound Naval Movement

**English** Moves to L. Dice: 2, 3, 3, 6. No losses.

**French** Moves to N. Dice: 3, 4, 5, 6. No losses.

**Portuguese** Moves to R. Dice: 1, 3, 3, 6. Loses 1 soldier.

**Spanish** Moves to K. Dice: 3, 4, 4. No losses.

Land Movement

**Portuguese** move 2 colonists from U to R. It is a climate 1 area with two sites and 1 native. Move 4 colonists and 3 soldiers from anchorage dot to R.

**Spanish** move 4 colonists and 4 soldiers into area K.

**French** move 4 colonists and 4 soldiers into area N.

**English** move 4 soldiers and 4 colonists into area L.

Native Combat

**Portuguese:** 1 natives killed in R. **Spanish:** 3 natives and 5 soldiers killed.

**French:** 3 natives and 2 soldiers killed. **English:** 2 natives killed.

Native Uprisings

Climate is a 1. Uprisings in K (0 colonists killed), N (0 colonist killed), and R (0 colonists killed).

Survival

Climate is a 6. No losses.

Political Control

Portuguese gain political control of R, Spanish gain political control of K, French gain political control of N, and English gain political control of L.

Homebound Naval Movement

**Portuguese:** Dice: 3, 4, 4, 6. No losses.

**Spanish:** Dice: 1, 2, 3. No losses.

**French:** Dice: 1, 4, 5, 6. No losses.

**English:** Dice: 1, 3, 3, 3. No losses.

Income

**English:** Political Control: \$40, resources: \$6.

**French:** Political Control: \$40, resources: \$5.

**Portuguese:** Political Control: \$40, resources: \$6.

Turn 3 Initiative

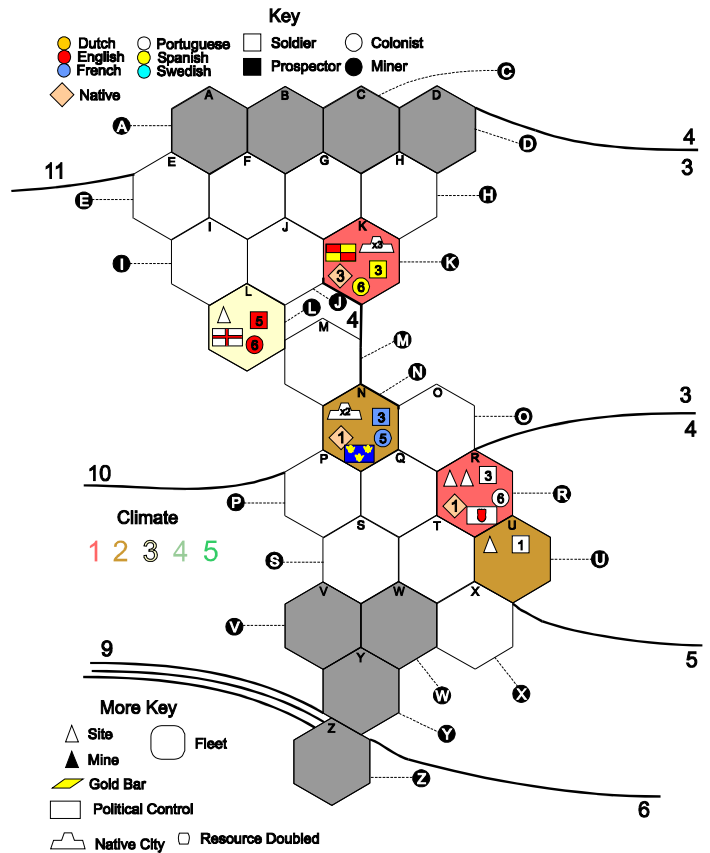
Portuguese, Spanish, English, French

Notes

**Will Andy York please submit standby orders for the Spanish!**

Players

Country	Player	Money	Available Soldiers	Ships	Colonists
English	Andy Lewis	\$82	17	4	4
French	Bill Scharf	\$82	17	4	4
Portuguese	Bob Robles	\$84	17	4	4
Spanish	Dennis Cain	\$46	15	4	4



**Trivia Quiz**

You get 2 points for a solo answer, 1 point for sharing the correct answer with one other person, and ½ point for sharing the answer with two or more people. Every 10 points earn you a free issue. Research is allowed. Free issues are credited as they are earned. Players may submit a list of questions (answers must be

included.) If used, five points are awarded. In addition, if no correct answers are received for a question, the supplier of the question receives two points. And so, without further ado, the answers to last issue's questions:

Q1. A manufacturer of confectionery has a workforce of thousands of workers. They never strike or demand better conditions. They work up to twenty hours a day and receive no wages other than food and shelter. Yet every year a completely new workforce is brought in and none of the existing workers are re-employed. Why?

A1. The workers are bees in a beehive.

Chris Geggus, Ward Narhi, Bob Robles, Paul Bolduc, Tom Howell, Andy York, and Brendan Whyte all receive ½ point.

Q2. Much of his painting was seen at the city's two large art galleries but no one had ever heard of him. Why not?

A2. He painted the walls at the art galleries.

Chris Geggus, Bill Scharf, Ward Narhi, Bob Robles, Caleb Cousins, Paul Bolduc, Tom Howell, Andy York, and Brendan Whyte all receive ½ point.

Q3. As a group of sailors emerged from their ship after months at sea, one spindly wimp bet his fellow sailors that he would have a beautiful girl on each arm within an hour. How did he win his bet?

A3. He had two beautiful girls tattooed on his arms.

Chris Geggus, Ward Narhi, Bob Robles, Caleb Cousins, Paul Bolduc, and Tom Howell all receive ½ point.

Q4. There is an orange in the middle of a circular table. Without touching or moving the orange or the table how could you place a second orange under the first?

A4. Put it under the table.

Chris Geggus, Bill Scharf, Ward Narhi, Bob Robles, Caleb Cousins, Paul Bolduc, Tom Howell, Andy York, and Brendan Whyte all receive ½ point.

Q5. A man who was completely bald met a doctor at a party. She had lovely short black hair. He explained that he had tried hair restorers and transplants but without any success. She sympathized. "If you could make my hair look like yours, I would gladly pay you \$1000," he said. "O.K., I'll do it," she answered. How did she win the \$1000?

A5. She shaved her head.

Chris Geggus, Bill Scharf, Ward Narhi, Bob Robles, Tom Howell, and Brendan Whyte all receive ½ point.

### Current Scores

Chris Geggus	74	Andy York	59	Paul Bolduc	51½
Bill Scharf	49½	Caleb Cousins	49	Dennis Cain	44
Joe Carl	41½	Brendan Whyte	39	Andy Lewis	33½
Ward Narhi	29½	Steve Koehler	29	Bob Robles	23
Tom Howell	19½	Brad Martin	16	Kevin Wilson	8
Sean Cousins	7	Sigourney Street	½		

Paul Bolduc receives 1 free issue.

### New Questions

#### Topic: Brain Teasers

1. In Camberley, England, two out of every seven people have telephone numbers that are not listed in the directory. If there are 14,000 names in the Camberley telephone directory, how many of them have numbers that are unlisted?
2. In Iran, a westerner cannot take a photograph of a man with a turban. Why not?
3. How many successful parachute jumps does a trainee parachutist in the U.S. Army have to make before he graduates from jump school?
4. A man carefully pointed his car due east and then drove for two miles. He was then two miles west of where he started from. Why?
5. If two are company and three a crowd, what are four and five?

## Pedagogy

Our current knowledge of physics allows us to extrapolate a tremendous amount with regard to the birth and eventual fate of our universe. Current theories and observations indicate that the universe will go on expanding forever, and in that case it is likely to pass through five distinct ages. This series of columns will delve into each age in detail.

Before I begin with the first age, however, I will describe a concept of time. As the universe expands and cools, things tend to happen on longer and longer time scales. For that reason, I will use something called a cosmological decade. To determine the cosmological decade for a given time, simply take the age of the universe in years expressed as a power of 10. The cosmological decade is the exponent. Thus, currently the universe is about  $10^{10}$  years old, so we are in the 10<sup>th</sup> cosmological decade. When the universe was 1 year old, it was the zeroth cosmological decade, and when it was less than a year old, the cosmological decade was negative. Thus the universe began in cosmological decade  $-\infty$ . The first age we will consider is the primordial age, and it lasts from cosmological decade  $-50$  to  $+5$ .

The earliest point at which our current theories can say anything is cosmological decade  $-50$ , or the Planck time. This is the point where we need a quantum theory of gravity to tell us anything. Since such a theory does not exist, we must move forward from this point. The universe at this time was incredibly hot and dense and three of the four forces of the universe were unified, acting as a single force. This was the realm of the Grand Unified Theories. These are a class of theories which unify the forces of electromagnetism, the strong nuclear force, and the weak nuclear force into a single force at very high energies. Physicists are not sure which of the theories is the correct one, and such a determination is extremely difficult. Using today's technology, a particle accelerator would have to be several light years in diameter to obtain the necessary energies, so physicists must rely on observations of the very early universe and the different predictions of the various theories.

At cosmological decade  $-42$ , the particle energy starts to dip below that needed to keep the strong nuclear force united with the electroweak force (that is the unified electromagnetic and weak nuclear forces). At this point, a strange thing happens. Some of the various fields associated with the grand unified theories have a strange property. When the field value is zero, the field strength is non-zero. This means that, for a brief time, space is caught in a "false vacuum" state. That is, the energy of the vacuum, due to the fields I mentioned above, is high, but it cannot readily decay back to a true vacuum state, like that with which we are familiar. This false vacuum has an energy density equivalent to about  $10^{80}$  grams per cubic centimeter, far denser than the core of a neutron star. However, it doesn't act the way you expect, because it has negative pressure. To illustrate, imagine a piston with the false vacuum state inside. Because the false vacuum state cannot readily decay into a true vacuum, if you were to pull on the piston and open additional volume inside, you would have to add energy. Therefore, the pressure resists expansion. However, according to general relativity, pressure can exert a gravitational force, and the gravitational force of negative pressure is likewise negative. Thus, the extremely strong negative pressure results in an astounding negative gravitational force, and inflation is born.

Inflation is the result of the second "phase transition" of the universe. The first happens at the Planck time, cosmological decade  $-50$ , when gravity becomes a separate force. This phase transition results in an exponential ballooning of space itself. In a minute fraction of a second, from cosmological decade  $-42$  to  $-39$ , space expands from something about the size of a pea to something perhaps many times larger than the observable universe. Toward the end of this period, the false vacuum does actually decay into the true vacuum, and as a result, the energy pent up in the false vacuum state is released as a soup of particles. In a last vestige of grand unification, there is a slight asymmetry, merely one part in a billion, that favors matter over antimatter. Therefore, for every billion particles of antimatter formed from the decay of the false vacuum, one billion and one particles of matter are formed. This has important implications, because if this

asymmetry does not exist, neither would we, and the universe would consist of nothing but radiation.

The universe continues as a hot, dense soup of quarks, antiquarks, leptons, and antileptons, dominated by the strong nuclear force and the electroweak force until cosmological decade -12. At this point, things have cooled off to the point where quarks can get together and become confined within a particle such as a proton, without other particles knocking a quark loose. This period is called quark confinement.

At about cosmological decade -7, one second after the Big Bang, two things happen. First, we enter the third, and to date, the gentlest phase transition, as the electroweak force separates out into the weak nuclear force and the electromagnetic force. This also allows nucleosynthesis to begin. In this sea of proton, neutrons, electrons, neutrinos, and photons, things have cooled down to the point that if a proton and a neutron get together, they are not immediately knocked apart again. This critical first stage results in the production of most of

our helium, as well as small amounts of deuterium, helium-3, and lithium-7. All heavier elements are formed later, in stars. This period continues through cosmological decade 2.

From cosmological decade 2 through 5, the universe is hot and dominated by radiation. It consists of ionized atomic nuclei, formed from the earlier period of nucleosynthesis, and electrons. Such an environment is totally opaque to radiation, since photons will be continually scattering off of the many charged particles around. Electromagnetism is the dominant force as it has been since cosmological decade -7, just as the grand unified force was before inflation, and the electroweak force was after inflation. At cosmological decade 5, however, the universe has cooled to the point where electrons and nuclei can get together and form atoms without the electrons getting knocked off immediately. Suddenly, the universe is transparent to radiation, and this allows a new force to gain dominance: gravity.

Next issue, I will discuss the next age of the universe, the stelliferous age.

### Addresses

Harry Andruschak 20805 Margaret St. Carson, CA 90745-1224 sarareichert@aol.com	Caleb Cousins 96 Cedar St. #4 Bangor, ME 04401 (207) 941-8568 caleb_cousins@umit.maine.edu	Steve Koehler "Devil Dog" 418 Linderhill Ln. Mathews, NC 28105 sdk@Prodigy.com (704) 544-2849	Lee McConnell 2023 Stancrest Rd. Dublin, OH 43016-9546 Bluefalcon@netwalk.com	Mike Scott 5508 Withers Ave. Fontana, CA 92336 mikesmag2@juno.com (909) 899-2378
John Boardman 234 E. 16 <sup>th</sup> St. Brooklyn, NY 11226-5302	Chris Geggus "Davey Boy Smith" 10 Talbrook, Brentwood Essex, CM14 4PY, UK Chris@geggus99.freemove.co.uk	Andy Lewis "Marmaduke" 16 Gossling Dr. Lewes, DE 19958 alewis@ispchannel.com (302) 644-1984	Ward Narhi 521 Moreley Akron, OH 44320 Wenarh@aestpe.com (330) 835-4013	Sigourney Street "Canine Killer" PO Box 1235 Boston, MA 02130-0011 SigStreet@aol.com
Paul Bolduc 203 Devon Court FWB, FL 32547-3110 Prbolduc@aol.com bolduc@eglin.afmil (850) 863-9081	Pasquale Giovine Via Ulisse Dini, 18 I-56126 Pisa, Italia giovine@mail.dm.unipi.it	Michael Lowrey 6903 Kentucky Derby Drive Charlotte, NC 28215 Mlowrey@charlotte.infi.net (704) 569-4269	Phil Reynolds 2896 Oak St. Sarasota, FL 34237 preyno@yahoo.com	Brendan Whyte Geography Department University of Melbourne Parkville 3052, Australia Brwhyte@hotmail.com
Tom Butcher 674 Roanoke Ave. Coyahoga Falls, OH 44221-1242	Ray Grib "Ray-Bid Basset" 2424 Penton Ct. Deltona, FL 32725 (904) 789-7867 raygrib@aol.com	Ken Marcinonis 657 Gannet Ln. Bolingbrook, IL 60440-1245 Kmarc@mediaone.net	Bob Robles "Howler" 67 Tara Rd. Orinda, CA 94563 76350.2203@compuserve.com (510) 254-6354	Kevin Wilson 373 Gateford Dr. Ballwin, MO 63021 ckevinw@aol.com (314) 391-9865
Dennis Cain "Red Dog" 1218 N. 3 <sup>rd</sup> St. Quincy, IL 62301-1727 (217) 223-2284 fax (217) 224-8393 dbear@rnet.com	Tom Howell "Whippet" 365 Storm King Road Port Angeles, WA 98363 off-the-shelf@olympus.net (360) 928-9698	Brad Martin 15 Turo Close Willeton 6155 Western Australia Australia Westfront@hotmail.com	Bob Rutherford "Chili Dog" P.O. Box 48 Kingman, AZ 86402 Bobr@eaze.net Bob-rutherford@amrcorp.com	Andrew York "Greyhound" P.O. Box 201117 Austin, TX 78720-1117 73210.3053@compuserve.com (210) 658-6066
Joe Carl 302 38 <sup>th</sup> St. NW Canton, OH 44709 Jcarl@neo.rr.com			Bill Scharf "Doge" 4814 Walnut Grove Ave. Rosemead, CA 91770 (626) 286-4428	

### Standbys

Anybody who gets onto my standby list automatically receives one free issue of *S.O.B.* In addition, if you actually submit standby orders, you get another free issue. So, let's get those people standing by. The current standby list is:

**Machiavelli (gunboat and regular):** Steve Koehler, Bill Scharf, Bob Robles, Mike Scott, Ward Narhi, Paul Bolduc, Joe Carl, Pasquale Giovine, Andy York, Phil Reynolds  
**Dune:** Steve Koehler, Paul Bolduc, Kevin Wilson, Ward Narhi, Andy York  
**New World:** Andy York, Bill Scharf  
**Merchant of Venus:** Paul Bolduc, Carrie Lewis, Bob Robles, Andy York  
**Die Macher:** Andy York  
**Outpost:** Michael Lowrey, Kevin Wilson, Andy York  
**History of the World:** Andy Lewis, Paul Bolduc, Kevin Wilson, Chris Geggus, Joe Carl, Andy York, Phil Reynolds  
**Stellar Conquest:** Paul Bolduc, Kevin Wilson, Andy York  
**Liftoff!:** Dennis Cain, Andy York  
**SolarQuest:** Andy York, Phil Reynolds  
**Age of Renaissance:** Bob Robles, Michael Lowrey  
**Kremlin:** Joe Carl, Andy York, Andy Lewis, Pasquale Giovine  
**Silverton:** None  
**Settlers of Catan:** Michael Lowrey

### Standby Calls

Steve Koehler for 2113 Corporation in Canes Venatici, and Andy York for the Spanish in Hounds of Tindalos.

Printed on recycled paper.