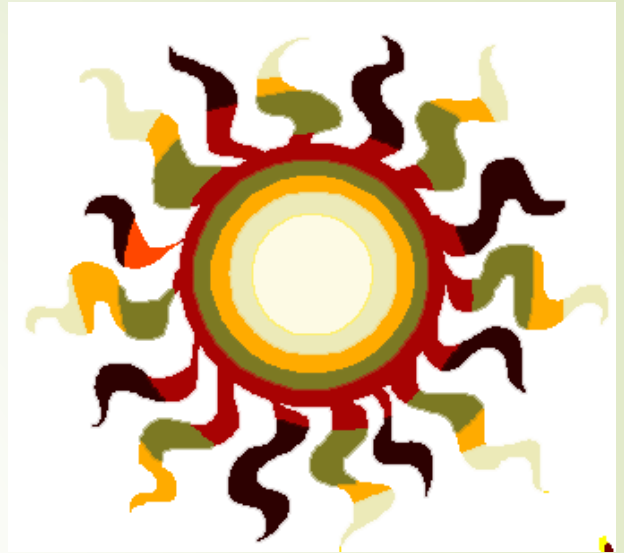


The Basics of Solar Cooking

Presented by Rose Marie Kern



Author of

**The Solar Chef: A
Southwestern Recipe
Book for Solar Cooking**

www.solarranch.com

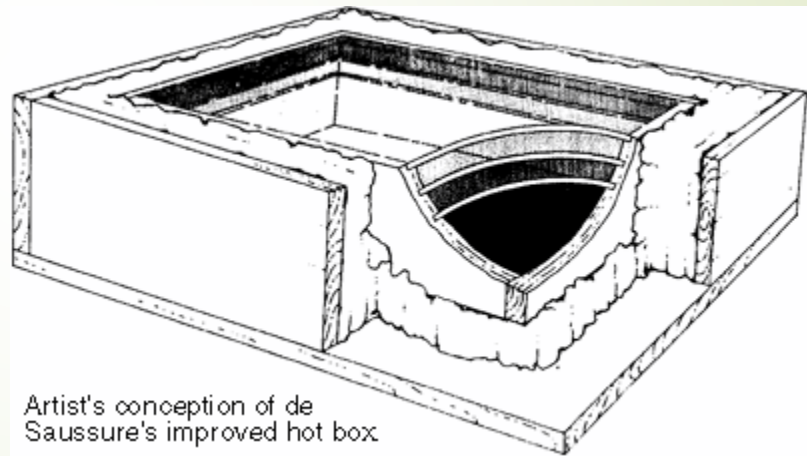
Solar Cooking in History

- 700 BC – Sunlit Fires
- We know that all the way back to the 7th century B.C., humans figured out how to make fires by concentrating the sunlight with magnifying glass.



Solar Cooking in History

1767 – Swiss Physicist Horace de Saussure
Created the first solar “hot box” cooker

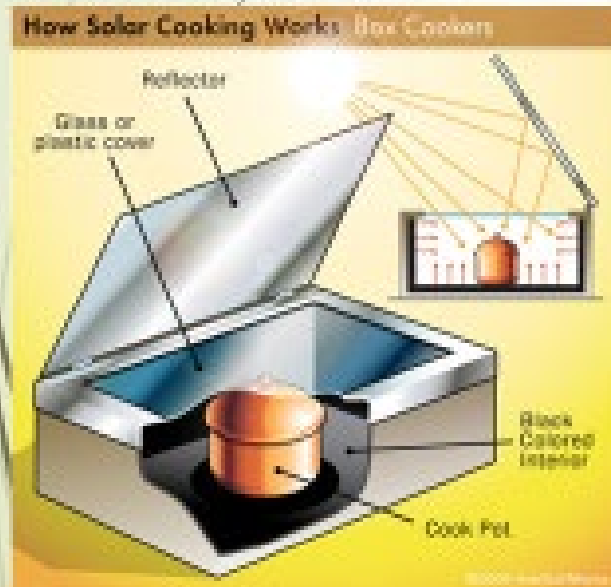


The main types of solar cookers

- ➡ Box Style Cookers
- ➡ Parabolic
- ➡ Tube Style Cookers
- ➡ Lens cookers

Basic Principles of Solar Cooking

- Solar Cookers depend on the principles of Insulation and Insolation
- Use some method of capturing sunlight and converting it to heat.



Solar Box Cooker Uses

Baking

Boiling

Broiling

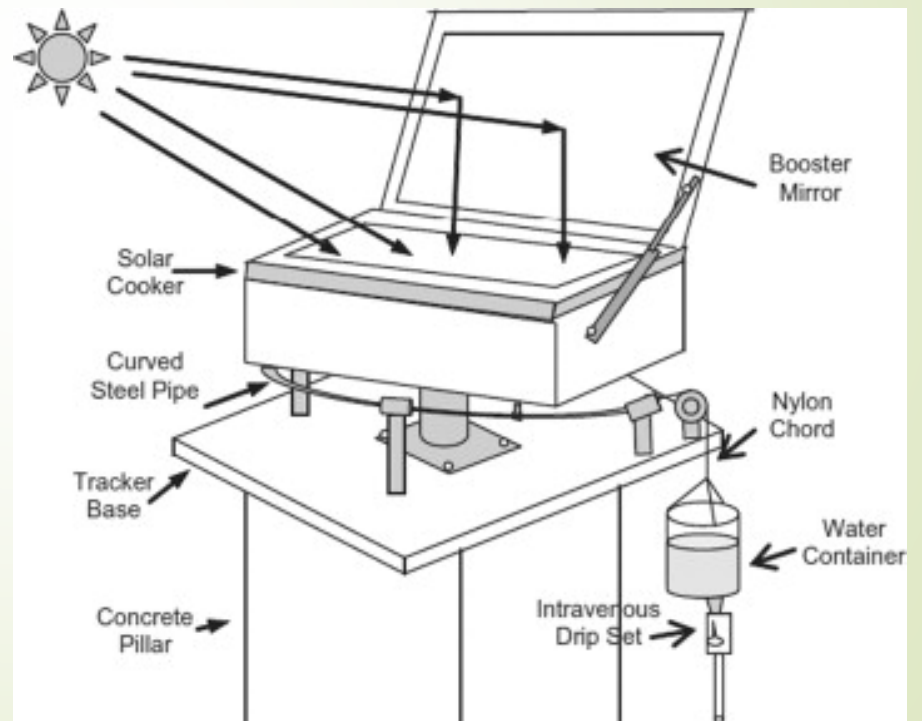
Slow Cooking

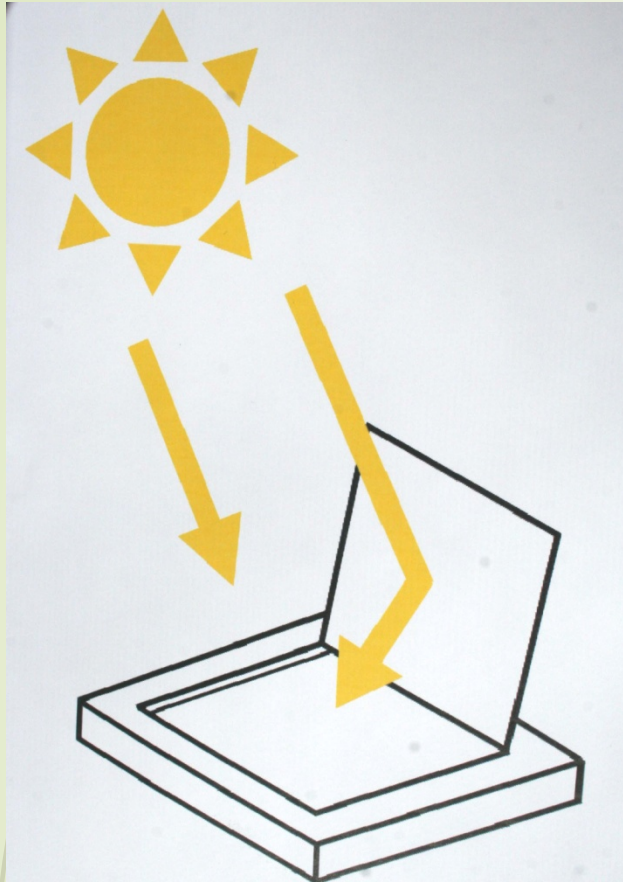
Emergency Cooking

Water Purification

Food Dehydration

Home Made Variations





Pizza Box Style Cookers

Various Home Made Cookers



**Adobe
box with
glass lid**

All American Sun Oven

The Ultimate Solar Cooking Appliance

Temps of 360-400 degrees F



What can you cook with a Solar Oven?

- Stuffed Bell Peppers
- Christmas Turkey
- Red Rice and Beans
- Breads, Soups, Stews
- Quiche
- Potato, Rice or Noodle Casseroles
- Corn on the Cob
- Pretty much anything!



Yes, You can solar cook in the winter.





Parabolic cookers
focus and reflect
sunlight at a point
above the unit.
Great for frying.



Parabolics can be unstable
in high winds.



Parabolic Design



Some homemade Parabolic Cookers.



Parabolic
Cookers capture
the sun but do
not have a
container to
retain the heat.



Glass bowl or black pot set
inside common reflective
materials like a car
sunscreen.

Disadvantage – no
insulation means quick
cooling.



Parabolic Alternatives.



Pit lined with shiny metal and dark bottles on the bottom or a big Aluminum Bowl and black pot wrapped in heat resistant plastic.

Good in the snow.





Tube
Solar
Cooker

Good
for
broiling
and
frying.



Easy, fast and delicious, this fuel-free cooker can bake, boil or fry a meal for eight people, (4x more food than the speedier [GoSun Sport](#)) using only the Sun.

MEET THE GOSUN GRILL: A COMPLETE REDESIGN OF THE MODERN GRILL

- **No Monitoring Needed:** No burnt food, just set it and go
- **No Carbon Crud:** No dirty fuel makes transportation easy and cleanup a breeze
- **Delicious + Nutritious:** Cooking evenly and retaining your food's moisture, you will taste the difference
- **Goes Everywhere:** Deck, boat, park, beach or kitchen, simply fold the reflectors and go
- **Future Options:** GoSun is working on a suite of accessories/upgrades such as a Grill Stand and the ability to Cook at Night

GoSun Grill

\$699

- Borosilicate Glass Vacuum Tube
- Quality Parts
- Mirrored Aluminum Panels
- Portable and Easy
- Temperature Up To 450 F



FREE SHIPPING

Fresnel Lens Cookers



Fresnel Lens is mounted and focuses light on pot behind it or...

Fresnel Lens Cookers

...Under it on a cooking surface!



Alternate Solar Cooker/dehydrator



Solar Cooking can be a community experience!





The
Solar Villager
can cook

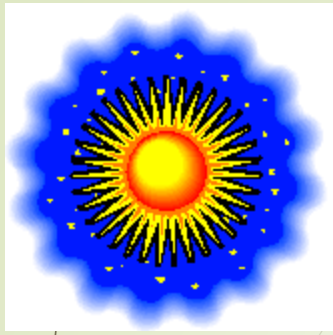
8 Turkeys
or
6 trays of cookies
or
40 Ears of Corn
or
20 loaves of
bread at a time!

Advantages of using Solar to cook.

- **Keeps your house cooler in summer**
- **Does not use electricity or gas**
- **Saves money**
- **When emergencies take out all power, you can still have a hot meal.**
- **Food tastes Fantastic!**

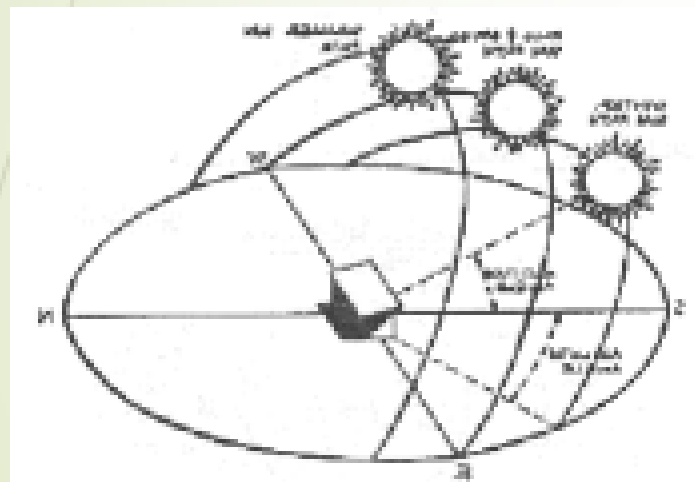
Can be used when camping when campfires or even propane campstoves are not allowed by the forest service.





- Know your cooking location, choose a place where shadows will not fall on the oven.
- When placing the oven, know where the sun comes up, where it is at noon, and where it will descend.
- Expect cook time to be 30% longer than in a convection oven.

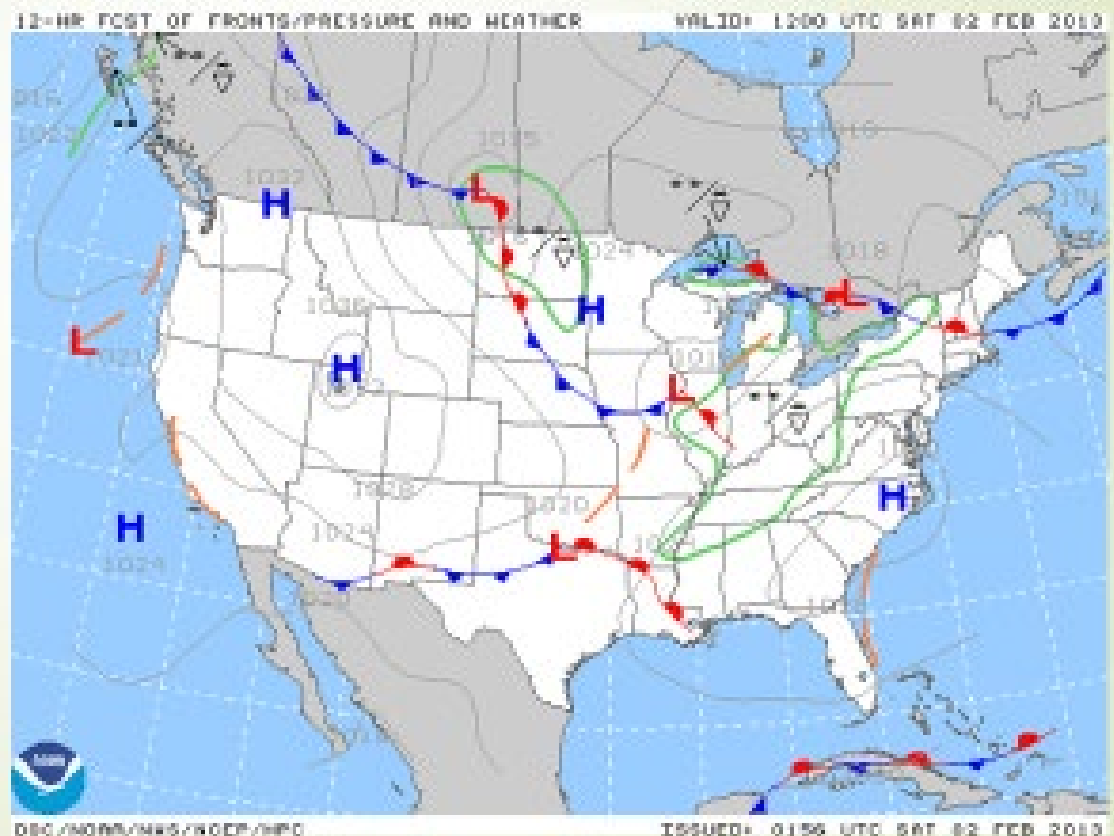
Sun angles are best from late April through mid October. On June 21st the sun's path reaches 33 degrees North Latitude.



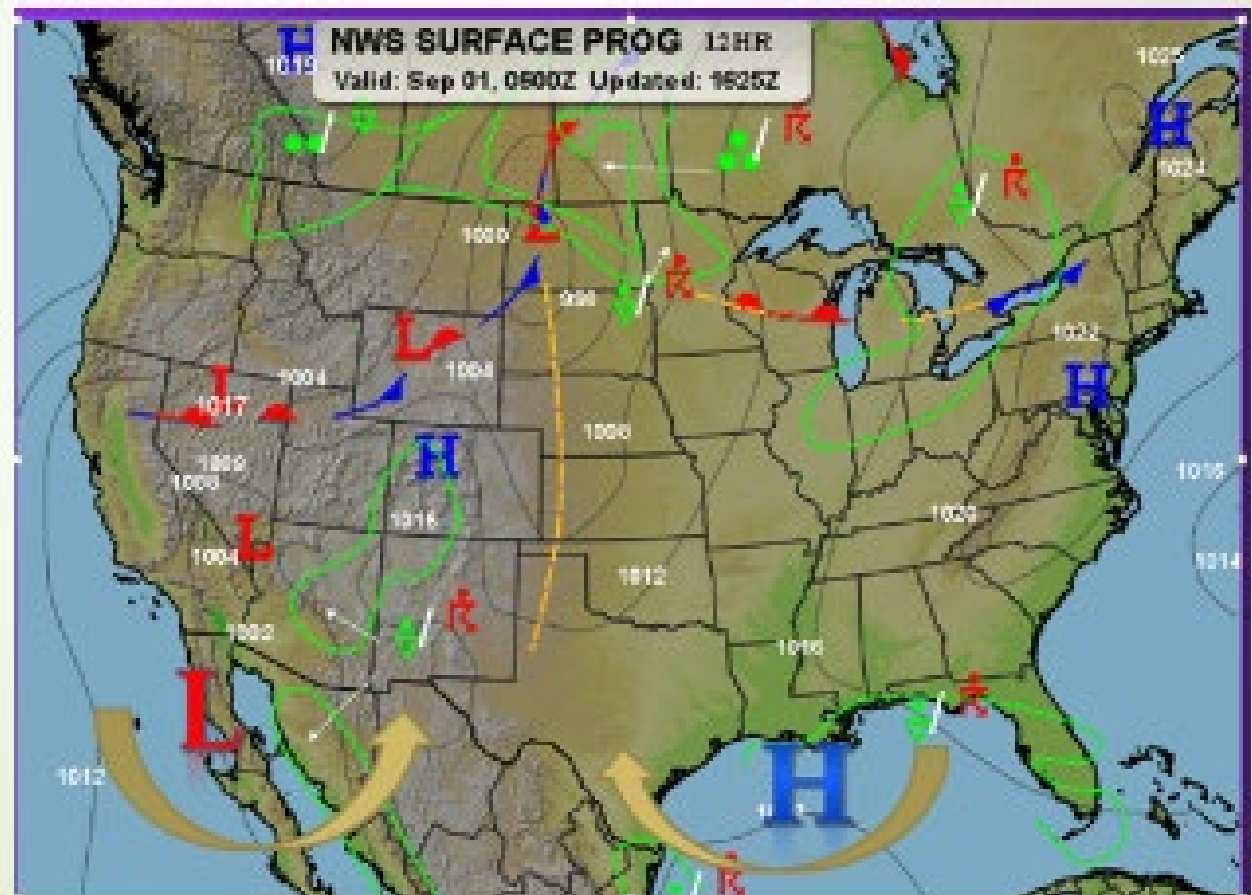
Albuquerque sits at 35 degrees north latitude.

Summer Sun versus Winter Sun

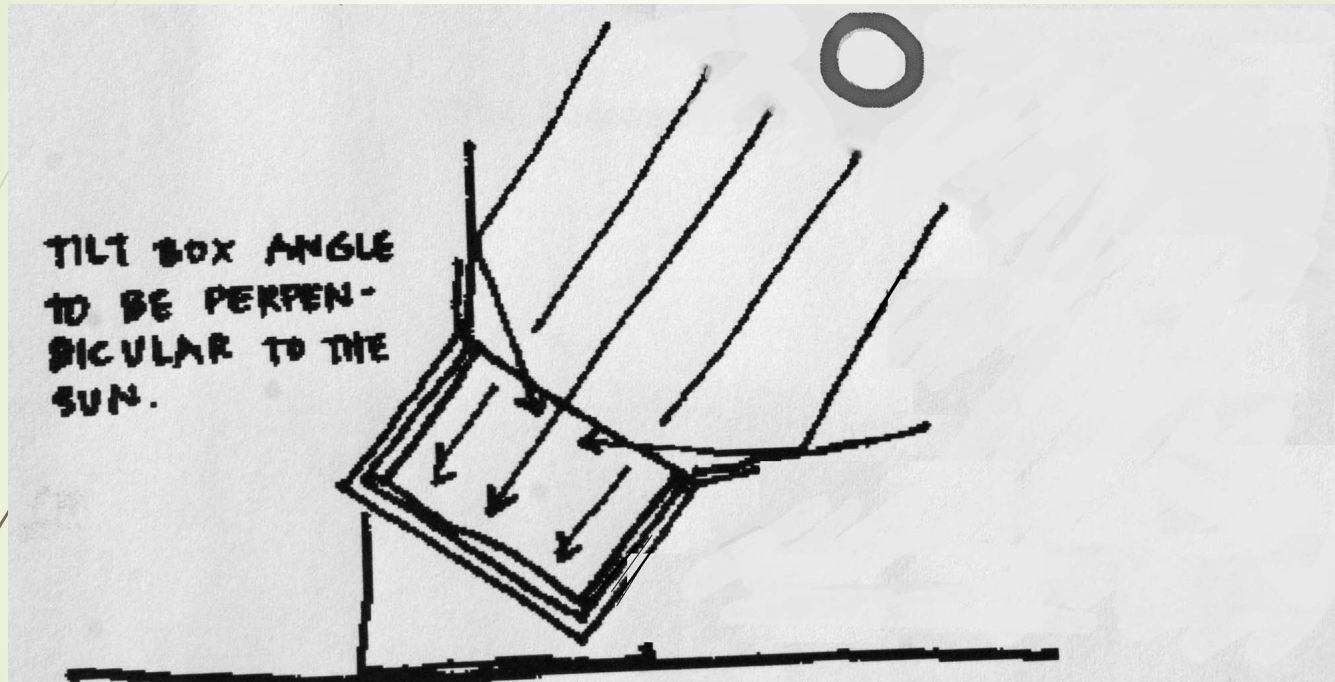
A large High pressure over and to the west usually indicates long periods of dry conditions.



The onset of Monsoon season is when there is a strong Low over the Baja and a strong High over the Gulf of Mexico.



Tilt box towards the sun



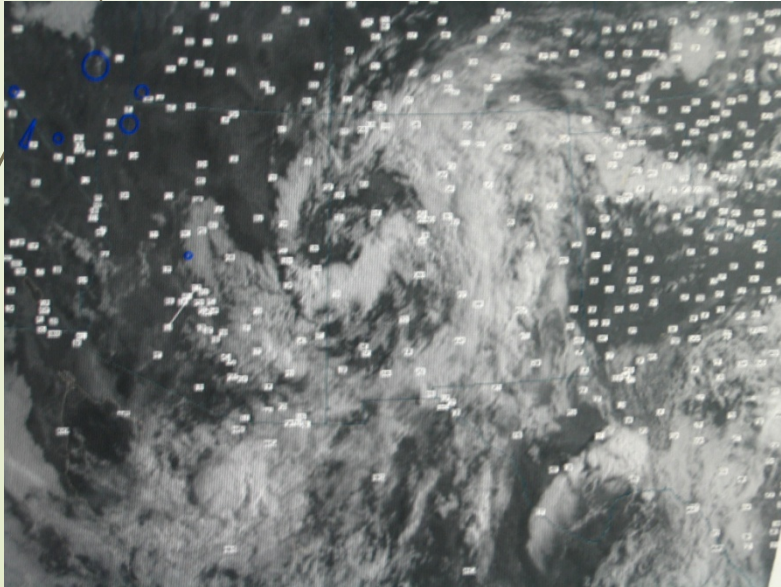
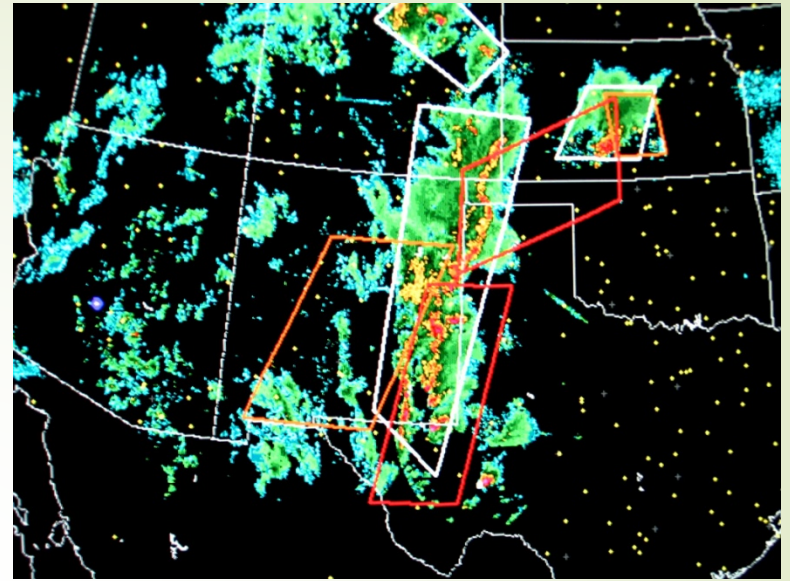
Spin box to follow sun to keep temperatures high. Adjust every half hour for baked goods and eggs.

When slow cooking aim the oven at where you think the sun will be in an hour...then walk away for the next four hours.

This is a good practice for roasts, soups, stews, beans, rice and casseroles.



- Solar Cooking
- Requires that
- You pay attention
- To Mother Nature!





ESPECIALLY
CLOUDS
AND WIND

WEATHER.COM

FORECAST

The Weather Channel

 Show me the weather in... city, zip, or place

 90° Albuquerque, NM

Today

Hourly


5 Day






10 Day










Weekend

LOCAL POLLEN ALERT

Albuquerque, NM 5 Day Weather

11:26 am MDT  Print

DAY		DESCRIPTION	HIGH / LOW	PRECIP	WIND
TODAY JUL 11		Partly Cloudy	97°/69°	20%	SSE 8 mph
FRI JUL 12		Mostly Sunny	96°/71°	10%	SSE 9 mph
SAT JUL 13		Partly Cloudy	95°/69°	20%	SE 9 mph
SUN JUL 14		Partly Cloudy	95°/70°	20%	SW 8 mph
MON JUL 15		Mostly Sunny	97°/71°	10%	NNW 7 mph

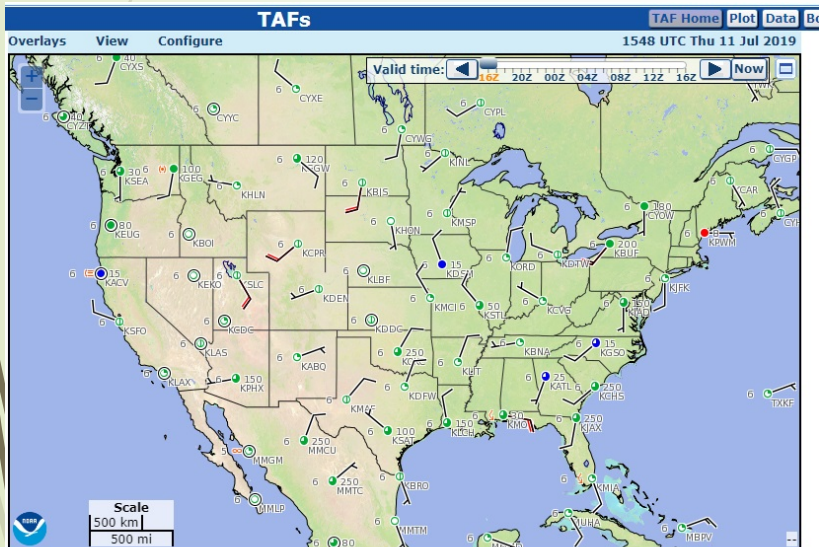
<div> Today <u>Hourly</u> 5 Day 10 Day Weekend </div>							
<div> Albuquerque, NM Hourly Weather 11:26 am MDT </div>							
TIME		DESCRIPTION	TEMP	FEELS	PRECIP	HUMIDITY	WIND
11:45 AM THU		Partly Cloudy	91°	91°	15%	28%	S 7 mph
12:00 PM THU		Partly Cloudy	92°	92°	15%	27%	SSW 7 mph
1:00 PM THU		Partly Cloudy	94°	94°	15%	22%	SSW 7 mph
2:00 PM THU		Partly Cloudy	96°	96°	15%	18%	S 7 mph
3:00 PM THU		Partly Cloudy	94°	94°	15%	18%	SSE 4 mph
4:00 PM THU		Partly Cloudy	93°	93°	15%	19%	SE 9 mph
5:00 PM THU		Partly Cloudy	94°	94°	15%	19%	ESE 8 mph
6:00 PM THU		Partly Cloudy	93°	93°	15%	18%	E 9 mph
7:00 PM THU		Partly Cloudy	90°	90°	15%	21%	E 11 mph

AVIATIONWEATHER.GOV

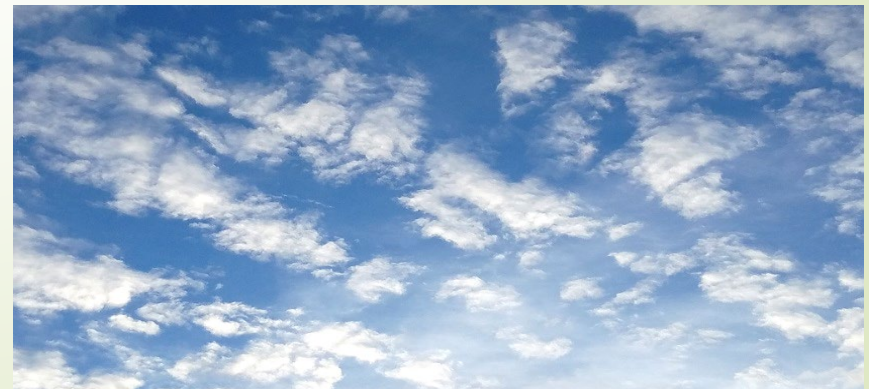
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KABQ 111120Z 1112/1212 07007KT P6SM SCT050 SCT150
FM111800 19007KT P6SM FEW080 SCT150
FM112100 22007KT P6SM VCTS SCT090CB SCT150
FM120000 11015G22KT P6SM VCSH BKN090

FEW



SCT



Regional TAF Plots



Manually select TAF data

IDs:

Format: ☒ Raw ☐ Decoded

☐ Include METAR

[Get TAF data](#)

Solar Cooking is still possible with a few clouds or a thin overcast cirrus layer – but stick to foods that need lower temperatures.



Best dishes for cooking in a Box Cooker

- **Thin Black metal covered pots**
- **Clear Casserole Dishes**
- **Dark Pottery Dishes**
- **Dark metal baking dishes**
- **Do not use white casserole dishes**
- **Cast Iron? Not really. Too heavy**
- **and only use aluminum if food is covering most of the surface. Will reflect sunlight back out.**



All American Sun Oven

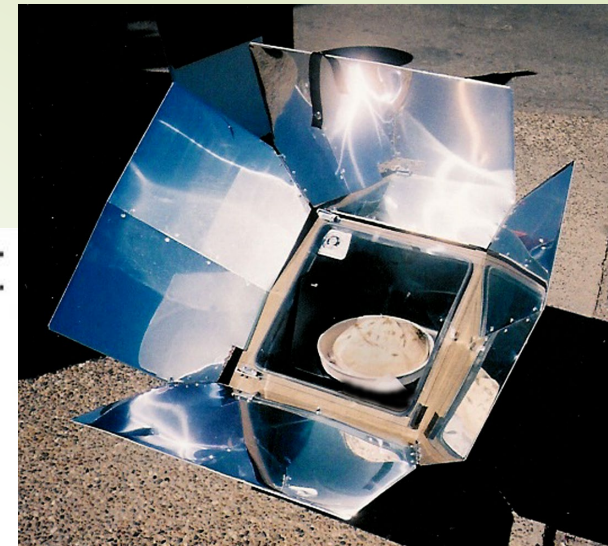
The Ultimate Solar Cooking Appliance

Temps of 360-400 degrees F





Folds up to carry like a suitcase.
Weighs only 23 pounds.



The All American Sun Oven has built in thermometer, 2 inches of insulation, a aiming device, heat tempered glass and folds up into a convenient carrying case weighing only 23 pounds.



Thin walled black pots

Casserole dishes can
be stacked.

Dark Clay pots
retain heat well.



General Information

- Best Cooking Times
 - Winter 10am to 4pm
 - Summer 8am to 6pm
- Preheat the oven for half an hour prior to cooking
- When using recipes written for convection ovens add 30% longer cooking times

Hints and Tips

- Use a roasting bag inside your pot for baking meats and turkeys.
- Ove-Gloves work best when lifting the glass lids and removing hot cookware.
- Treat the inside of the tempered glass with **Rain-x** to keep humidity from fogging the glass and lowering the temperature.
- Tuck baking potatoes inside clean black socks and set around other dishes in oven.

Sun Oven Drying

While perfect for solar cooking, a sun oven requires a lot of attention to keep it from overheating while drying. This is one time when you do NOT point the oven directly at the sun!



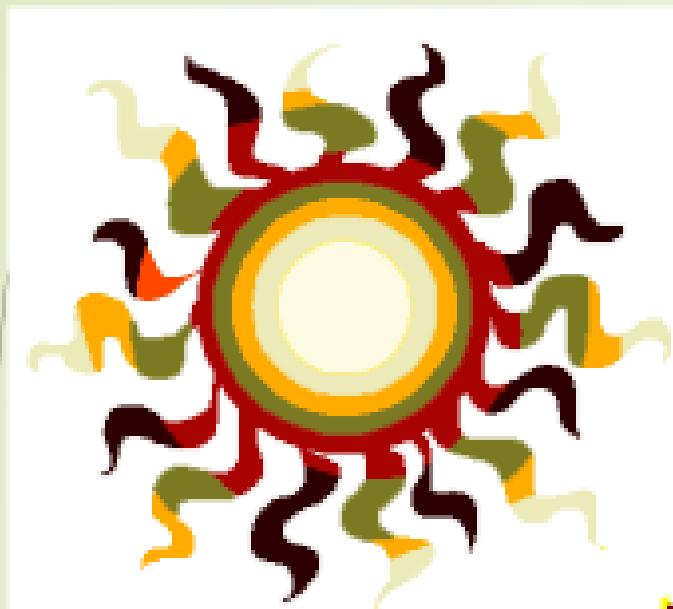
Sun Ovens are best for jerky because the temperature can get high enough to kill all the bacteria.

They also work for larger, juicier fruits or vegetables requiring drying times which may take days.

While actively drying, the glass lid is propped open to expel moisture. Close it at night to protect the food until the next day.



Dehydrate in
partial shade with
the glass open $\frac{1}{4}$
inch.



Fruits/Vegetables suitable for drying

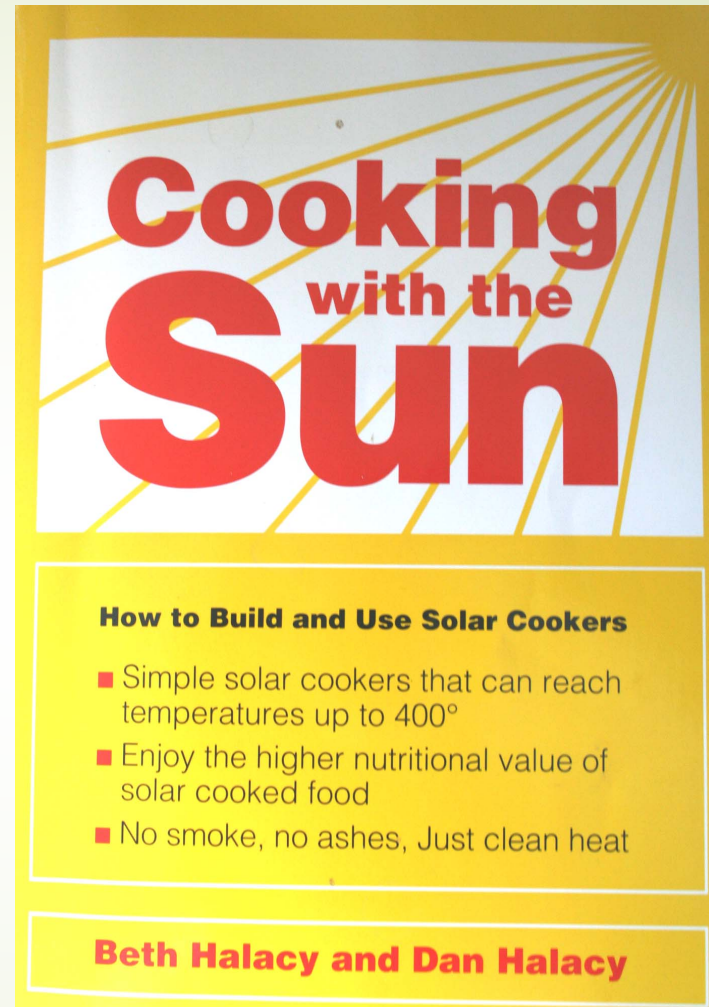
Dry Veggies and Fruit
between 120-150°F

Apples
Apricots
Beets
Carrots
Bananas
Sweet Corn
Cherries
Garlic
Grapes

Coconuts
Horseradish
Celery
Mushrooms
Figs & Dates
Okra
Onions
Nectarines
Parsnips

Peaches
Parsley
Pears
Peas
Pineapples
Peppers
Plums
Potatoes
Pumpkins
Tomatoes

Good book about Building Solar Cookers



Available today for
\$12.00

How to cook
with solar and
which has a
wide variety
of recipes



The Solar Chef

A Southwestern Recipe Book
for
Solar Cooking

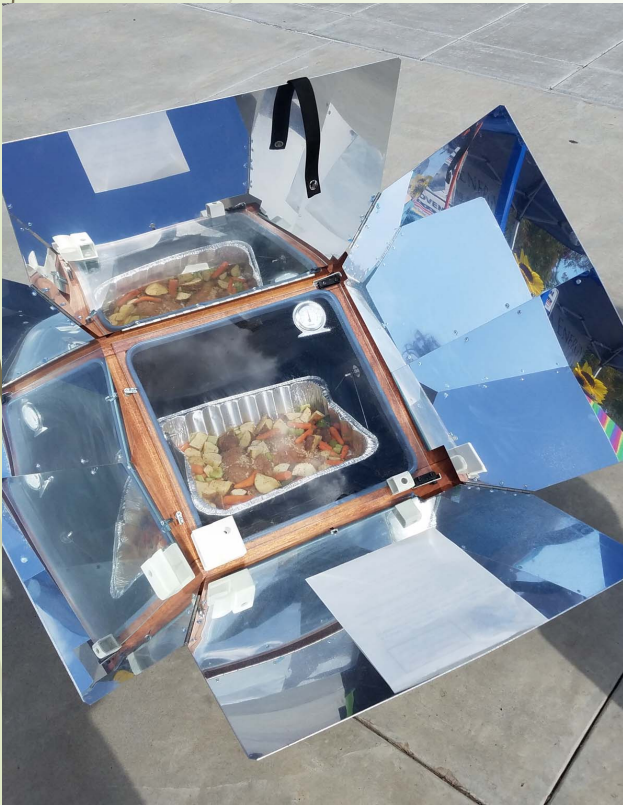
Produced by Solar Ranch

All American Sun Oven

Manufacturer Price \$349.00

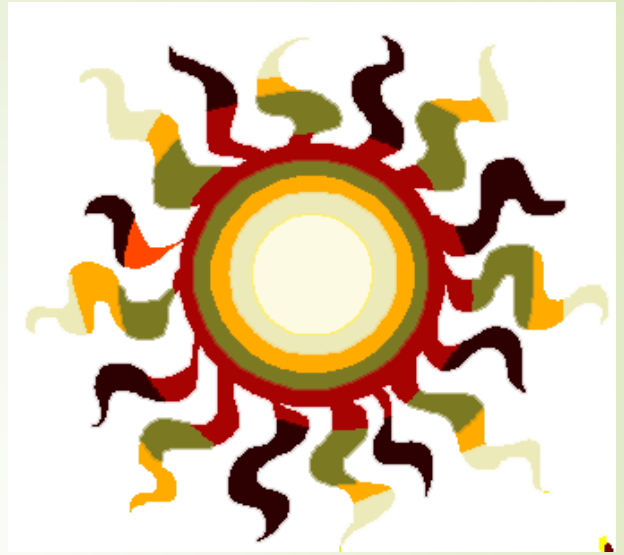
➡ Check online for
discounted price at
www.solarranch.com

Free copy of **The Solar
Chef** with oven purchase.



The Basics of Solar Cooking

Presented by Rose Marie Kern



LET's EAT!

