

## Instructions for use of the Sky Chart

The chart is accurate around our latitude in Lake Tekapo which is 44 degrees south and will work reasonably well in a band across the country including Timaru, Twizel, Mt Cook and the glaciers.

To use the sky chart you need to be in a relatively dark area and face toward the South. If you are unsure where south is, stand with the horizon where the Sun set to your right. You are now, very approximately facing south, close enough to be able to find the Southern Cross (Crux) and the Pointers which will help you to find true South.

The Southern Cross appears to rotate through a complete circle in our sky throughout the year so you will find that it is sometimes on its side, sometimes right side up and sometimes upside down. The two bright pointer stars, Alpha and Beta Centauri, should help you find it and the chart will also show you its current position.

Having found the Southern Cross, you need to imagine a line that extends through the cross from its top to its bottom and continues to cross the sky until you come to the first relatively bright star in the way. This star is Achernar on the chart. The midpoint of that line, between Achernar and the star at the foot of the cross, is (approximately) the special point in the sky called the South Celestial Pole. If you drop a perpendicular from that empty area of sky down to the horizon, that is the direction of South. Once you have done it a couple of times, especially at different times of the year, you will have no problem finding south and getting oriented in the sky.

Now, facing south, if you hold the chart in front of you and then swing it up above your head, you now have a map of the circle of sky above you. South Horizon on the map is now toward the South, North is behind you and at the top of the chart.

It is very hard to read the chart in this position, and you will undoubtedly need a torch to do so. But turning on the torch will destroy your night vision for a few minutes, so this takes a bit of practice.

But, persevere – it will be worth it. See the position of Crux on the map and in the sky. Pick another object to look at and see its position relative to Crux, while holding the map above your head. Turn off your torch and give your eyes a minute or two to re-adjust to the darkness, and search that part of the sky for your object. Go slowly, looking for just the one new object each time, as you “feel your way” around the sky.

You will need just a few minutes for a few nights to become familiar with the current sky above you. It becomes easier if you go out regularly, a couple of times a month, as you can follow recognizable objects from month to month in their journey around the sky and will know where to expect to see new objects rising, as the already familiar ones drop below the horizon; especially if you go to the same location all the time so that you can orient yourself to landmarks as well. From the sequence of the monthly charts you will also become familiar with the paths of various objects in the sky, which, except for the planets and special visitors like comets, repeat every year.

The planets are another story. If you come for a Tekapo Starlight tour, all will be revealed and you will have a good grounding in finding your way about the night sky. It can open a whole new world of wonders for you, a world that is readily available if you find a relatively dark place where you can explore. And when surprising things occur out there, and wondrous new discoveries are made, you will be well placed for understanding and perhaps even observing them.